THE MACARONI JOURNAL

Volume 36
No. 3

July, 1954

Disclaimer: Page 1 is extensively deteriorated and cannot be filmed because handling will cause further damage.

Is Your Package Almost Perfect?

If you were standing in water 6" over your head, just stepping up onto a 5" floor wouldn't help you very much.

If your package is almost, but not quite as good as your competitors', you probably are losing sales *every* day in Self-Service stores.

In these stores where 70% of all food is sold today your package must compete, not only with other Macaroni packages, but with *many other varieties of foods.*

A Macaroni package that will cause a shopper to select a *Macaroni Product* in preference to some other possible food, will broaden your market to an amazing degree.
How can this be done?

We recently did this for a well-known food packer. We re-designed his package and by illustrating on the Front Panels of his packages a variety of tempting dishes, each prepared with his own product, many new customers found themselves wanting to eat at least one of them.

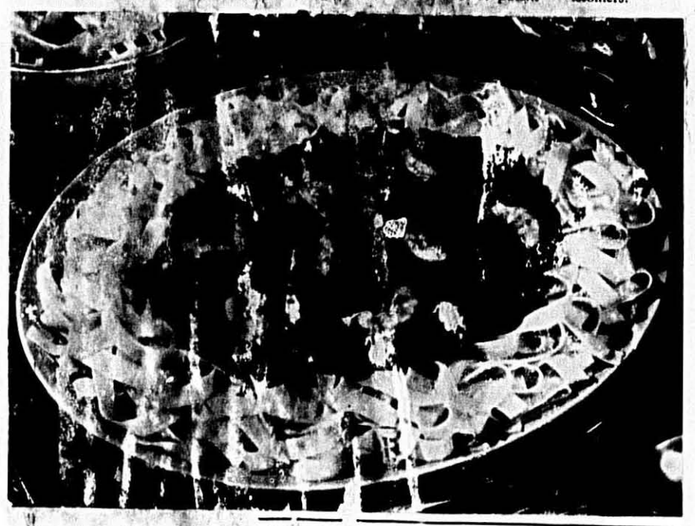
Shoppers, seeing the mouth-watering ready-to-serve dishes shown in full color on the cartons began planning meals around them.

They may have entered the store totally different kind of meal in mind.

The new packages broadened the or this basic food product, and made his pac ful new asset in Impulse Buying.

Result: His sales nearly doubled

Isn't it time to study your Macaron kages for their competitive sales impact on shoppers in elf-Service stores? To see if your package can be used to br aden your market for Macaroni Products, becoming First Choice of a larger number of potent stomers?



Will you cut out this Pictorial and place it on your present Macaroni package? Doesn't it whet your appetite? It will have the same effect on many women shoppers in Self Service stores.

We will be happy to consult with you on your packaging problems. There is a qualified Rossotti representative near you. He has many helpful facts and figures at his fingertips. Just call or write us for an appointment. It could mean a very profitable increase in your Macaroni sales.

Rossotti *packaging consultants and manufacturers since 1898.*

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Order... THEN RELAX

The sure way to get "delivery when prom-ised" is to order Amber's 50-50 Blend. Your order will be shipped on schedule.

And you will get carefully selected durum and hard wheats, milled especially for the Macaroni Industry. Amber's 50-50 Blend is uniform, too... uniform in color and quality for absolute dependability in your plant.

Order Amber's 50-50 Blend... then relax.

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AMBER MILLING DIVISION

Farmers Union Grain Terminal Association

MILLS AT RUSH CITY, MINNESOTA • GENERAL OFFICES, ST. PAUL 8, MINNESOTA

The MACARONI JOURNAL

July, 1954
Volume 36, No. 3

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Cover Photo

July is picnic time. Macaroni, spaghetti and egg noodles make delightful salads or hot casseroles for out-door eating. For recipes see pages 38 and 42.

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I SPEAK FOR DEMOCRACY

By ELIZABETH E. EVANS, *Buchtel High School Junior, Akron, Ohio*
Presented at National Chamber of Commerce 42nd Annual Meeting

I AM AN AMERICAN.

Listen to my words, Fascist, Communist.

Listen well, for my country is a strong country, and my message is a strong message.

I am an American, and I speak for democracy.

My ancestors have left their blood on the green at Lexington and the snow at Valley Forge

... on the walls of Fort Sumpter and the fields at Gettysburg

... on the waters of the River Marne and in the shadows of the Argonne Forest

... on the beachheads of Salerno and Normandy and the sands at Okinawa

... on the bare, bleak hills called Pork Chop and Old Baldy and Heartbreak Ridge.

A million and more of my countrymen have died for Freedom.

My country is their eternal monument.

They live on in the laughter of a small boy as he watches a circus clown's antics

... and in the sweet, delicious coldness of the first bite of peppermint ice cream on the Fourth of July

... in the little tenseness of a baseball crowd as the umpire calls "Batter Up!"

... and in the high school band's rendition of "Stars and Stripes Forever" in the Memorial Day parade

... in the clear, sharp ring of a school bell on a fall morning

... and in the triumph of a six-year-old as he reads aloud for the first time.

They live on in the eyes of an Ohio farmer surveying his acres of corn and potatoes and pasture

... and in the brilliant gold of hundreds of acres of wheat stretching across the flat miles of Kansas

... in the milling of cattle in the stockyards of Chicago

... the precision of an assembly line in an automobile factory in Detroit

... and in the perpetual red glow of the nocturnal skylines of Pittsburgh and Birmingham and Gary.

They live on in the voice of a young Jewish boy saying the sacred words from the Torah: "Hear O Israel: the Lord our God, and the Lord is One. Thou shalt love the Lord thy God with all thy heart and with all thy soul and with all thy might."

... and in the voice of a Catholic girl praying: "Hail, Mary, full of grace, the Lord is with thee ..."

... and the voice of a Protestant boy singing: "A mighty Fortress is our God, A Bulwark never failing ..."

An American named Carl Sandburg wrote these words:

"I know a Jew fishcrier down on Maxwell Street with a voice like a north wind blowing over corn stubble in January.

He dangles herring before prospective customers evincing a joy identical with that of Pavlova dancing.

His face is that of a man terribly glad to be selling fish, terribly glad that God made fish, and customers to whom he may call his wares from a pushcart."

There is a voice in the soul of every human being that cries out to be free. America has answered that voice.

America has offered freedom and opportunity such as no land before has ever known, to a Jew fishcrier down on Maxwell Street with the face of a man terribly glad to be selling fish. She has given him the right to own his pushcart, to sell his herring on Maxwell Street.

... She has given him an education for his children, and a tremendous faith in the nation that has made these things his.

Multiply that fishcrier by 160,000,000—160,000,000 mechanics and farmers and housewives and coal miners and truck drivers and chemists and lawyers and plumbers and priests—all glad, terribly glad to be what they are, terribly glad to be free to work and eat and sleep and speak and love and pray and live as they desire, as they believe!

And those 160,000,000 Americans—those 160,000,000 free Americans—have more roast beef and mashed potatoes,

the yield of American labor and land;

... more automobiles and telephones,

... more safety razors and bathtubs,

... more orlon sweaters and aureomycin, the fruits of American initiative and enterprise;

... more public schools and life insurance policies, the symbols of American security and faith in the future;

... more laughter and song—than any other people on earth!

This is my answer, Fascist, Communist!

Show me a country greater than our country, show me a people more energetic, creative, progressive—bigger-hearted and happier than our people, not until then will I consider your way of life.

For I am an American, and I speak for democracy.

TOMORROW'S OPPORTUNITIES – UNLIMITED SCIENCE AND PROSPERITY

By DR. GEORGE R. HARRISON, *Dean of the School of Science, Massachusetts Institute of Technology, Presented at National Chamber of Commerce 42nd Annual Meeting*

IN spite of wars, strikes, and other forms of social friction that tend to keep us poor, the United States economy continues to flourish at an ever-increasing rate. Dips, recessions, and even depressions of business have depths which themselves are higher than the highest peaks of industrial activity we envisaged early in the century. American citizens now have a standard of living seven times that of the average of the rest of the world, and four times their own of 1900. This year, each of us will earn, on the average, twice the goods and services that our predecessors could earn in any of the early 1920's. Our national wealth has increased since 1900 from 88 billion dollars to more than 1300 billion. Thus, despite 55¢ dollars and punishing taxes, world political unrest, and cries of havoc on every hand, our shares in Republic U.S.A. grow increasingly valuable.

What makes this possible, and how long can it continue? Recently I predicted that by 1976, when our nation will be 200 years old, we can expect to be at least twice again as well off materially as we are now. Yet we certainly are burning up our coal and oil, depleting our mineral deposits, cutting down our forests, exhausting our land, and spending increasing fractions of our resources for national defense and world aid. Also most of us work less than half as many hours per week as was customary fifty years ago. Can we continue indefinitely to accumulate material wealth at a constantly increasing rate? And if so, where will it come from?

To make reliable predictions, one should take his attention away from the surf and breakers of the economic sea, and look at the welling of the deep technological tides that lie behind American prosperity. These have their origins in the discoveries of science, and in our genius for technology. Our wealth level, though greatly affected by the activity of our economy, the effectiveness of our government, and the team work of management and labor, depends basically upon our ability to control matter and energy. The three key words to our prosperity are energy, matter, and know-how.

For many years productivity in the United States has been doubling every third of a century, and today it is increasing even faster. In 1900, each man, woman, and child had about 2 horsepower working for him day and night. Today the figure is nearly ten, or more than 2000 times that available when the nation was born. Though our population will probably have grown to more than 200 millions twenty-five years from now, we can expect each of our citizens then to have available more than 12 horsepower. This seems a small increase, but science is also continuously improving our ability to use energy more effectively, so the gain will be more than enough to double our standard of living. Today, with only about 1/14 of the world's population, we control almost half of the world's energy output, not so much because of our wealth of raw materials, as because our industry is geared to utilize technological developments as they become available.

Where does all the energy we control come from? In the early days of our nation, most of the energy used in industry came from sunshine stored in feed and food. Animals furnished about half of the energy used, and humans about a quarter. The remaining quarter was obtained from wind, wood, and water power.

How different is the situation today when in a year we use more energy to produce wind with electric fans than we took out of the air with the windmills of earlier days. More than half of our energy now comes from oil and gas; a slightly smaller fraction from coal; a little over 5 per cent from water power; and a slightly higher proportion from the products of agriculture, of which only one-third represents human food. One social result of this greater processing of energy has been a change in our working hours, which have fallen from the 70-hour week of 1850 to the 40-hour week of 1950. With a further fall possible, how long we want to work becomes increasingly a matter of choice, and we have new opportunities to develop those things of the mind and spirit that make material wealth of value.

But most of our present sources of stored energy will eventually be exhausted. We do not ordinarily seek out reserves of gas and oil sufficient to last more than 25 years, and certainly our petroleum supplies will eventually taper off. Although the visible coal deposits will last much longer, they cannot last forever. Water power represents current rather than stored solar power, but even if developed to the five times our current usage which is possible, it cannot in the future furnish more than 25 per cent of our energy needs.

Recently, however, scientists have turned our attention to two great sources of energy which appear to be inexhaustible, and which they are beginning to learn to tap effectively. These are the sun and the atom. As sources of energy, they are actually one and the same.

Basking in the sunlight on a June day, we think of our sun as a mildly glowing object, much more gentle in its action than any bomb of the type recently exploded in mid-Pacific. But gentle is as gentle does; for if all the light and heat emitted by the sun were focussed on the earth, it would vaporize the oceans and shrivel our planet in a matter of seconds. Actually the sun is a huge thermonuclear reactor which, at temperatures similar to those in the center of an A- or fission bomb, combines the nuclei of hydrogen atoms into helium nuclei, thus releasing approximately 1 per cent of the energy in the nucleus.

Fortunately, we receive only two billionths of this energy, and it keeps the earth comfortably warm. But before it ends up so doing, sunlight can be used to do all sorts of useful work. We receive from the sun 20,000 times as much energy as we use now for all purposes of living. On a sunny day, about 1 horsepower falls on each square yard of land or sea, and solar energy collectors covering an area 15 miles square could run all the industries of the U.S. This sounds exciting; but if one tries to capture and convert sunlight, one finds over-all efficiencies running from around 1/10 per cent for methods now in use up to a possible 10 per cent or so. A process by which solar power could be captured and converted into electrical power with an over-all efficiency of 4 per cent would be considered excellent today.

Scientists and engineers have suggested many different methods of improving the effectiveness of solar conversion, including using mirror collectors, using thermocouples or photo-conductive cells, absorbing sunlight in ponds to grow algae, and improving techniques of agriculture. There is some hope in all these methods, but at present they are too expensive to complete economically with conventional sources of power. The apparatus needed is too costly to build or to maintain, or both.

The energy falling on one square mile in a day at present power rates is worth about $200,000, and at 4 per cent efficiency of conversion this would give a daily income of $8,000. However, any apparatus yet suggested to capture and convert this much solar energy would cost at least 100 million dollars, and interest on this would be more than $10,000 a day. In addition one would have the heavy upkeep cost required to keep huge mirrors shiny, to replace broken glass, and in some of the systems to move the receivers to follow the sun. Yet if scientists can even double the present top efficiencies, solar energy capture may go from the economic red into the black. To be sure of doing this we need to know more about matter and energy.

When we consider utilization of energy direct from the atomic nucleus, we find a different situation facing us. The sun's nuclear energy, by the time it reaches us, is gentle and diffuse, just right to induce atoms to rearrange themselves into the complex molecules from which plants and animals build their cells. Nuclear energy released on earth on the other hand, is concentrated and intense. It is natural, then, for the scientists to plan to use atomic energy where he wants high temperatures and pressures and great energy concentrations, and to use solar energy where gentle diffuse actions are required. For the ordinary purposes of industry we have to concentrate solar energy, and water down energy from nuclear reactions.

A few years ago, only Uranium 235 seemed to be a controllable nuclear fuel, and the U235 in sight seemed equivalent to about 600 billion tons of coal, or 1/6 of our world reserves. Recently, however, with the breeder pile it has been found possible to use U235 to convert ordinary U238 into plutonium. This raises the world's atomic energy reserves to the equivalent of 90 trillion tons of coal; thus we see our visible energy store of all sorts increased at least 25-fold over the situation of a few years ago. This means that the human race should be able to raise its standard of living 25-fold without even bothering to capture sunlight.

Hundreds of different possible nuclear reactor designs have been suggested, and a great many of these will probably operate satisfactorily. The Atomic Energy Commission has recently authorized building five different types of power reactors for experimental purposes. Some of these are designed for the production of industrial power, one to give at least 60,000 kilowatts, and later power reactors may be much larger.

If it were not for the radioactive emanations produced, there would be no modern power plant simpler than a nuclear reactor. All one has to do is pile up nuclear fuel in such a way that the neutrons rushing around among the atoms are conserved; moderate their speed somewhat so that they will strike atomic nuclei within the proper speed range; control their concentration so that the amount of energy built up will not exceed the desired output; and finally get energy out at any rate you want, from a complete explosion in millionths of a second to a slow simmer which would hardly serve to boil an egg. It is too bad that the nuclear waters continue to be muddied by the political and military implications of this tremendous new force, and by unnecessary fears that nuclear, rather than political, reactions are getting out of hand.

Even though the sun is a hydrogen reactor, it is a little early yet to decide whether we can ever have on earth one of these which will operate at a strong simmer instead of exploding in millionths of a second. If the speed, instead of merely the extent, of a thermonuclear fusion reaction can be controlled, water can become the fuel that inventors have long dreamed of. In chemical terms water is ashes of hydrogen, and hence its energy has already been extracted. But when we get into the atomic nucleus, amounts of power thousands of times those needed to separate hydrogen atoms from water molecules become available. If this can be worked out, humanity should never need to worry about its energy supplies again.

Turning now to matter, the atoms used in industry have in the past aided in making our country great. Much wealth has come from such natural stores as iron, copper, aluminum, magnesium, and to a lesser degree gold and silver. Titanium is now hailed as a new wonder metal, making possible lighter alloys for building construction and new possibilities of corrosion resistance and high temperature resistance. But our once rich mines are being depleted. However, few atoms escape from the earth, and the problem is primarily one of collection and refinement of atoms, for which we require only energy. With plenty of power we can turn increasingly to the sea and to the processing of cheaper deposits of minerals to obtain the atoms we need. If you pump a cubic mile of water out of the sea, and are willing to furnish the millions of kilowatt-hours of energy needed to evaporate it, you can get 56 million tons of sodium, 87 million tons of chlorine, 5 million tons of magnesium, 300,000 tons of bromine, and many other useful atoms. Then there is the granite of the eternal hills; so if we have increasing amounts of ever-cheaper energy available, we need also never worry about the poblem of matter.

Even with our present supplies of atoms and energy, our wealth level is being raised rapidly by the development and utilization of new molecules. Chemists and physicists now can isolate 100 kinds of elementary atoms. By putting these together in groups, as when two atoms of hydrogen and one of oxygen are joined to form a molecule of water, nature has produced hundreds of thousands of different molecules, each of which represents a different substance. Chemists can also make new molecules not found in nature, and by this means are more than doubling the number available. I need not remind you of the long list of molecules on which million-dollar industries are founded, such as cellulose acetate and nitrate, polystyrene, polyethylene, nylon, and methyl methacrylate. A new variety of molecule can add immeasurably to man's wealth, safety, comfort, health, and general welfare. The wonder drugs, vitamins, molecules for pest and fungus control, textiles, synthetic rubber, are all examples. In Ceylon the use of DDT for insect control cut the over-all death rate in half in four years. Penicillin cut our pneumonia death rate in half in a few years. Now molecules not yet thought of can be expected in the future, for there are vast numbers of combinations of atoms that have not yet been tried.

Consider the rubber used in automobile tires. In 1910, the average American workman could drive twenty miles on the rubber he could purchase with an hour's work. Today, he can drive 100 times as far. Our wealth level in terms of the actual cost of rubber has improved only 16-fold, but in terms of the obtainability of tires it has gone up a hundredfold because workmen, being more productive, can now earn more. Our over-all standard of living shows a rate of improvement which results from the average of a great number of such advances. The improvement has been greatest in the cases where science and technology have been most directly involved. The household refrigerator was put on the map by the development of a new molecule, freon, which has a more desirable boiling point and is less corrosive and toxic than previously available molecules. In 1936, two million refrigerators were sold in the U.S. at an average cost of $185; ten years previously, only 200,000 were sold at an average cost of nearly $400. Thus freon molecules, put in an efficient pumping system which will run more than fifteen years with only the original lubrication, has resulted in new wealth for the housewife, for labor, for the manufacturer, and for the government. This is the secret of American prosperity. Most of the wealth being added currently to our economy is not dug out of the ground or taken from one person's pocket and put into that of another, but is produced by increased knowledge. It comes from something new under this sun.

One may object to this fundamental approach to the origins of American prosperity, as neglecting important secondary factors, of which many can influence the result. How about techno-

logical unemployment? With increased numbers of automatic machines throwing men out of work, will technology bring us to another situation like 1932? The answer is, new machines in general produce more jobs than they destroy, for the improved efficiency that results produces new wealth and increases the availability of, as well as the demand for, new goods and services.

The number of jobs in the U.S. in 1900 was 29 million. Now there are between 60 and 70 million, an increase somewhat greater than the population increase. Most of these jobs were made by machine.

The products of technology are of two kinds: improvements in fulfilling wants that already exist, and fulfillment of needs that were not previously known to exist. The livery stable industry, which employed 100,000, was supplanted by the automobile industry, which gives employment to more than 4 million. The airplane industry gives employment to many hundreds of thousands of skilled personnel in a field that is destined to grow much larger, and did not exist before 1903. The chemicals industries have grown from almost nothing to rank with steel and agriculture. The communications industries give employment to millions in the motion picture, television, radio, telephone, and telegraph fields. One machine leads to another, and both are merely the material and energetic manifestations of man's increased ability to mould his environment.

We need have no fear of limitation of markets so long as the purchasing power of our citizens is kept up, and the most direct way of doing this is by means of the technological advances that spring from science.

In assessing our prosperity it is important to distinguish between transients and a steady state. When you first close the switch to start an electric motor, it draws much more current from the line than when it has come up to speed. So it is with forces affecting an economy, or a social structure or our psychological climate. Technological unemployment is a transient dislocation which has increasingly less effect as our industry becomes more complex and variegated. Much more important is the steady state of technological employment. So effective has the process of new machines producing new jobs become that the number of jobs is being increased more rapidly than the number of people available to fill them, so that now it is becoming impossible to find enough people for jobs which must be carried out without machine aid, such as nursing, bricklaying, and domestic help. We can expect increasing shortages of labor, and increasing demands for new machines, whether mechnical like a tape-directed milling machine, or chemical like a new fertilizer process.

Of our three basic constituents of prosperity—energy, matter, and know-how—the first two are in pretty good shape, but many laymen wonder when scientists will have made all the discoveries that can be made. That day is probably so far distant in the future that we need not worry about it. Science has been called the "endless frontier." Nowadays every question answered by a new discovery raises several others, and the tree of knowledge shows no signs of reaching saturation in stature.

There is, however, one dangerous shortage which can affect the field of know-how. Though our supply of scientists and technologists is increasing, it is not increasing as rapidly as in some other countries, not as fast as the need. There are 600,000 scientists and engineers in the U.S.; about 1 worker out of 100 is in this category. Two kinds of shortages exist in the field. There are periodic shortages of several thousands engineers a year and about half that number of scientists. Beyond this we need to double our supply of certain tyes of scientists, for there is evidence that many who could contribute to our national welfare never find fulfillment of their potentialities.

It is entirely possible that a more imminent and likely danger than the elimination of our cities by hydrogen bombs, is the gradual weakening of our research and technological potential by the slow degeneration of our secondary school educational system. The standards in our high schools are dropping rapidly, especially in regard to the teaching of science. This is closely connected with the salaries paid high school teachers, which have long been linked with real estate tax rates. They should be more directly linked with the increased wealth of society which springs from their products, the young men and women whom they educate to keep our industry and commerce operating adequately.

My most direct concern is, of course, with the colleges, especially the private universities which, if they are not eventually to come under government control, must depend increasingly on appreciation by industry of the importance of their role in furnishing two of industry's most important raw materials-man-power and know-how. But even more urgent than this is the problem of the secondary school, for this sets the fundamental standards not only for the education of our citizenry, but for the basic standards of science which control our technology and thus affect our economy.

We have much to worry about these days, but let's make sure we worry about the right things.

NATIONAL MACARONI WEEK
October 21-30, 1954

THE DURUM SITUATION AS OF MAY 1, 1954

By MAURICE L. RYAN
NMMA Durum Committee

LAST year we had a total planted acreage of slightly over 2,000,000. Then, when the farmers voted for acreage restrictions, we would have been brought down to a limit of 1,500,000 acres. I believe that every one in the macaroni business is aware of the work done and with the help of many friends in the Congress of the United States, we were successful in having the acreage reduction done away with and instead there was an authorized increase of 50%, which would give us 3,000,000 acres for 1954.

I am positive that we have no chance at all of even approaching the 3,000,000 acre figure. I have been to North Dakota and checked on the prospective number of acres, and also have been in contact with not only the County Agents, County Committees, Greater North Dakota Association, Elevator Operators, but other folks well informed on the subject of farmers' intentions to plant.

Cavalier County ordinarily has the greatest Durum production and the largest number of acres. In this County there are approximately 2,000 farms. The Eastern edge of the County is not good Durum territory. Twelve hundred farmers in Cavalier County have applied for the increased acreage allotment on Durum. These 1,200 farmers make it almost 100% of the known Durum raisers.

Some seeding has been done already in the more Southern areas. Not much has been done in the northern part of North Dakota. It is my considered opinion that if the weather will permit planting of durum within the next few weeks, that we will end up with a total acreage of 2,200,000. On the other hand, if planting is delayed beyond the point where the farmers feel assured of sufficient time to beat the rust, the acreage will drop well below 2,000,000 acres. I would estimate about 1,700,000 maximum if seeding is late.

At the moment, there is sufficient top soil moisture in most of the Durum area. Not long ago they were having dust storms, but since then there has been rain and snow. Now, what we want is enough dry weather to make the ground suitable for planting. If we reach the figure of 2,200,000 acres and if the rust does not damage it, we should end up with a total production of about 31,000,000 bushels. If the rust hits and last year's average prevails, we will have a crop of 15,500,000 bushels.

Personally, I believe that we in the macaroni industry will be faced with the necessity of blending for several years to come.

MACARONI FESTIVAL

Devils Lake, North Dakota, Chamber of Commerce Sponsors Celebration June 9 and 10

ONE of America's most famous chefs will go to Devils Lake, North Dakota to supervise the preparation of a macaron' dinner for an estimated 7,000 who are expected to attend the Macaroni Festival being held there on June 9 and 10.

The National Macaroni Manufacturers Association, which will begin celebrating its 50th anniversary in June, is sending William Gosy, head chef at the world famous Sherman Hotel in Chicago, to the festival. Gosy will be in complete charge of all arrangements for cooking and serving the free dinner to the visitors attending the affair. He has notified the Festival authorities that he will use his own nationally known recipe for Spaghetti a la Gosy, which is a feature of the Sherman Hotel.

In addition to the dinner which will be held on the lawn of the Devils Lake Memorial Building, a highlight of the two day celebration will be the "Mrs. Macaroni" contest. The winner will receive a week's paid vacation for herself and her family at a well-known resort.

Another feature of the gala affair will be the cooking contest with $255.00 being awarded as prizes. The contest is being conducted as a means of developing new uses for the manufactured products of durum wheat in every day menus.

Other events on the schedule include parades, dances, a mayor's eating contest (in which mayors from the Lake region will compete with the chief magistrates of selected Canadian cities to see how much macaroni they can consume), children's eating contests, baseball games, a show, with professional entertainers, and a cooking school which will be under the direction of Mrs. Alma Oehler, home economist for the North Dakota Mill and Elevator Association.

Here Are Program Details

On June 9 at 9:00 p.m. Whoopee John and his band from Minneapolis will play for dancing.

June 10 is a full day with the following program:

11:00 a.m.—Festival Parade.

11:30 a.m. to 1:30—Free Macaroni dinner to visitors. On lawn of Devils Lake Memorial Building. Music by Lake Region Bands. Children must be accompanied by parents.,

2:00 p.m.—"Mrs. Macaroni" candidates to be introduced at Memorial Building. Mayor Kelly welcomes North Dakotans—Governor Brunsdale and Congressman Otto Krueger welcome Canadians.

2:30 p.m.—Mayors' eating contest. Lake Region Mayors and Chief Magistrates of selected Canadian cities compete in Macaroni eating contest with the mayor of Devils Lake.

2:45 p.m.—Two childrens' eating contests. Boys and Girls divisions. Contestants must be 13 years old or less. Each town or township is limited to just one entry in each division. Register for contest Memorial Building morning of June 10. Three prizes, $10, $5, $3 each division.

3:00 p.m.—1-act professional show. Memorial Building. Bud Jacobson, comedian; Harry Habata, accordianist; Bob and Diane, roller skaters and the Four Gages, acrobats.

4:00 p.m.—International Tug-O-War contest. North Dakota's brawniest VS picked team of Canadian strongmen.

4:30 p.m.—"Mrs. Macaroni" candidates judged. American Legion Building. Candidates will appear in both street attire and bathing suits.

7:00 p.m.—Baseball games. Semi-finals of State Class B High School Baseball tourney, Roosevelt Park.

7:00 p.m.—Cooking School and contest. American Legion Building. Conducted by Mrs. Alma Oehler, Home Economist, State Mill, Grand Forks. Macaroni dishes to be featured. Entertainment.

9:00 p.m.—Festival dance. Memorial Building. Eugene Kahn and his orchestra. Admission, Festival Button or $1.00.

10:00—Performance of 4-act show. Memorial Building.

11:00 p.m.—"Mrs. Macaroni" announced.

Recipes Will Be Featured

Three divisions have been set up for competition in the cooking contest as well as for demonstrations in the cooking school. The categories are (1) salads, (2) hot dishes, (3) unusual desserts.

Chef William Gosy plans to use the following recipe for his famous Spaghetti a la Gosy, served at Chicago's famed Sherman Hotel, to feed 7,000 persons expected at the Festival:

CHEF WILLIAM GOSY

14 gallons olive oil
160 lbs. ground veal
160 lbs. ground pork
120 lbs. onions
40 stalks celery
40 lbs. mushrooms
40 heads garlic
40 No. 10 cans tomato paste
40 No. 10 cans tomato puree
40 cans No. 10 stewed tomatoes
15 lbs. salt
5 lbs. white pepper
5 lbs. sugar
20 bunches parsley
25 lbs. flour
1800 lbs. spaghetti.

The chef will have about 25 helpers to cook the spaghetti and sauce in 8 G.I. containers. They will wield a half dozen wooden spatulas some six feet in length.

Dru Handy of the Chicago office of Theodore R. Sills & Company will attend the festival to handle publicity for the National Macaroni Institute.

A good time will be had by all.

Views on Durum Situation Vary

The durum situation appears encouraging to the optimists and discouraging to the pessimists, according to an article in the Cavalier County Republican around the first of May.

The Langdon paper says, "With present durum varieties few farmers will put all their eggs or crop in one basket. Most farmers who have previously raised durum are planting at least some of that crop. In the heart of the durum area there will be little hard wheat grown.

But in Cavalier County, heart of the durum country, only 1,200 of 2,200 farm units applied for the increased acreage allotment allowed by the USDA for durum. Of those who sought increases, chances are than many will fail to plant to the allowable limit.

Several reasons for the lack of interest in increasing durum acreages have been brought forward. Chiefly they ap-

pear to be: fear of stem rust; lateness of the announcement and difficulty from standpoint of farm planning of increasing durum acreage at that time; and fear of a market break, coupled with possibility of rust damage.

Some changes in management plans will tend to reduce potential yield on durum acreage this year even if rust damage is light. Farmers are planning to put much of their durum on second crop land insted of on fallow. In case of serious rust trouble, the durum on second crop land stands a much better chance of producing a crop due to the thinner stands.

In doing this they are balancing lesser risk against chances of a lesser crop and settling for the surest possibility. The planting rate on second crop land should run about a peck under that on fallow. Where seed is light, the planting rate will have to be adjusted to take in the larger number of kernels. Consideration will also have to be made for the greater plant loss.

While farmers attempted to get durum in early, few have succeeded. This week and next are the average seeding weeks in the Langdon durum area.

A look into the future shows that the supply of Sentry, the new early durum that carries some tolerance to stem rust, will be sufficient two years from now to cover much of the area. There should be about 1,400 bushels of this new variety available for increase this year.

For the present, the durum outlook appears to be reasonably fair with the price picture strong. Some rust damage is almost certain, but the amount will depend upon later weather developments.

May Weather Had Everything

The North Dakota Weekly Weather and Crop Report for May 4 said: "The cold, wet, windy weather brought field operations to a halt the last half of the week and the added delay is causing concern in sections where little or no seeding has been done. Wheat planting is usually completed by the early part of May and if much more delay occurs, acreage shifts may take place in the late areas. Progress of field work continues to be most advanced in southeastern sections and most retarded in Canadian-border. For the state, approximately 60% of the hard wheat is now planted. Nearly half of the durum acreage has been seeded, but there is a wide variation of completion. In Bottineau, Cavalier and Pierce Counties only 10 to 15% of the crop is in the ground, but in most of the other principal durum sections from 50 to 70% of the acreage has been planted."

On May 15 Bert Groom wrote from Grand Forks: "Went up to farms at Langdon Monday as seeding operations were reported under way following a three weeks delay on account of rain and snow. There is plenty of moisture now.

"Checked with some fifty boys in the Future Farmers of America Club to learn if their fathers had increased acreage: large growers have increased acreage very little.

"Seeding should be all completed by May 20 and with the abundant moisture we now have will come fast and be o.k. The light weight durum seeded is germinating up to expectations and only trouble will be some will be too thick.

"Growth up to the past five days has been very slow. Trees on the hills have not leaved out and grass only made a good showing in past few days, but I have 300 acres of sweet clover coming through nicely."

JAMES J. WINSTON

Reprinted by Request:

Labelling of Macaroni Products During Shortage

The Standards Committee of the Association called on the Food and Drug Administration, Washington, D. C. on August 27, 1953 to acquaint them with the following:

(1) The extent of the durum wheat shortage of the current crop.

(2) The fact that the available farinaceous material being sold by the millers will not conform with the present ingredient labelling on packages.

(3) That many manufacturers have as much as a year's supply of present packaging materials or in the process of manufacture.

The Food and Drug Administration was well acquainted with the Durum situation and expressed its understanding.

As a result of our conference the industry advised as follows:

(A) Manufacturers may continue using their stock of packaging materials and those already contracted for during this emergency period.

(B) If it develops that this shortage of durum will continue for an extended period, it is urgently recommended that all new cartons omit the statement referring to ingredients.

As you know, there is no need for the declaration of ingredients on our packages since our products are standardized by Federal Regulations.

The Food and Drug Administration is fearful that the present situation may tempt some manufacturers in the use of artificial color. Manufacturers are warned that such a practice is illegal and will result in prosecutions.

James J. Winston Reports:

Manufacture of Experimental Foods

Regarding manufacture of experimental foods which are not in compliance with the Standards of Identity, the Food and Drug Administration has amended the Federal Regulations to permit manufacturers greater leeway in carrying out necessary experimental work, prior to making formal proposals for amending the Standards of Identity.

It is now possible to receive a temporary permit from the Food and Drug Administration for interstate shipments of experimental packs of food varying from the requirements of definitions and Standards of Identity. This is based upon the fact that the Department of Health, Education and Welfare recognizes that appropriate investigations of potential advances in food technology sometimes require tests in interstate markets and acceptance by consumers. Therefore, it is the purpose to permit such tests where they are necessary to the completion or conclusiveness of an investigation, and where the interests of consumers are adequately safeguarded.

The Food and Drug Administration will therefore refrain from prosecuting a manufacturer on the charge that a food does not conform to an applicable standard. If the manufacturer holds an effective permit from the Secretary providing specifically for those variations in respect to which the food fails to conform to the applicable definition and Standard of Identity.

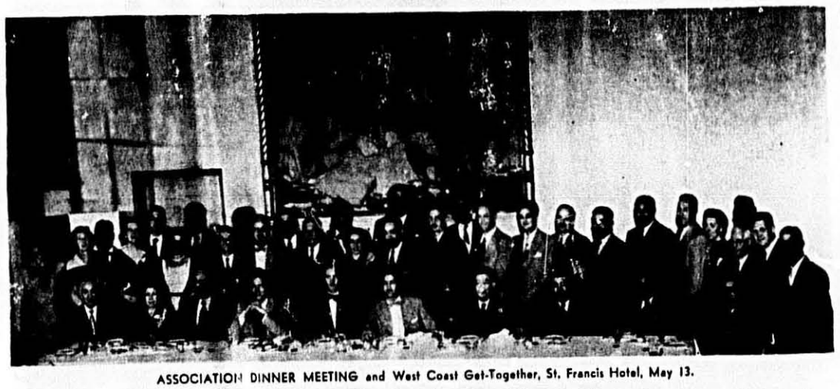
Any manufacturer desiring a permit, may file with the Secretary of the Department of Health, Education and Welfare, a written application in triplicate, requesting variations from the Standards of Identity.

West Coast Get-Together

More than 50 macaroni manufacturers, their suppliers and ladies attended the cocktail party and reception held by the General Mills Sperry Division in the Borgia Room of San Francisco's St. Francis Hotel on Thursday, May 13.

WEST COAST GET-TOGETHER

West Coast Macaroni Manufacturers and Allies Meet May 13 at San Francisco's Hotel St. Francis



ASSOCIATION DINNER MEETING and West Coast Get-Together, St. Francis Hotel, May 13.

GENERAL MILLS RECEPTION preceding the West Coast Get-Together dinner. G.M. personalities seated (left to right) Mrs. G. H. Groom, Sharon Groom, Mrs. Harmison Hale, Mrs. E. C. Outman, Mrs. Ralph Ball. Standing (left to right) Don Knudsen, Peter Pence, G. H. Groom, Harmison Hale, Lloyd Ferrey, Gene Outman, Ralph Ball.

GOOD FELLOWSHIP at West Coast Get-Together (left to right) Ed DeRocco of San Diego, Bob William of Los Angeles, Paskey DeDomenico of Seattle, Vincent DeDomenico of San Leandro, Guido Merlino of Seattle, and Fred Spadafora of Los Angeles.

AT THE HEAD TABLE (left to right) Mr. and Mrs. Ralph P. Ball, Robert Hoskins, Glenn Hoskins, William Hoskins, Vincent DeDomenico, Robert Green, Guido Merlino, Theodore Sills.

PLANT OPERATIONS FORUM VI
In Chicago April 29-30—In San Francisco May 13-14

The Glenn G. Hoskins Company of Libertyville, Illinois, held their annual Plant Operations Forum in two sessions this year. The first session met at the Chicago campus of Northwestern University on April 29 and 30. The second session met at the St. Francis Hotel in San Francisco May 13 an 14.

This was the sixth annual school for macaroni plant superintendents, top management and allies to discuss technical problems of macaroni manufacture.

The program in Chicago had the following features: Employee Relations Panel:

—"Do You Want to Be a Better Boss?" —Glenn G. Hoskins

—"Good Plant Morale Is No Accident" —Thomas J. Viviano, Delmonico Foods

—"Introducing the New Employee to His Job"—Alvin M. Karlin, I. J. Grass Noodle Company

"Management Techniques for Employee Efficiency"—H. Geddes Stanway, Vice President Production Operations, Skinner Manufacturing Company. Mr. Stanway, a former management consultant, professor, author of a book on Job Evaluation, told the importance of applying scientific management to macaroni production.

"Getting Along with Unions" by John W. Drish, Illinois Bell Telephone Company, gave a philosophy, practical pointers and rules governing conduct with union people.

Steam Generation, Transmission and Heating principles were presented by a panel of experts. A short course was given on installation, operation and maintenance of boilers, piping, heaters and traps with motion pictures and advice from practical men of broad experience, including Ed Habenicht of Crane Company, Richard Lee of Armstrong Machine Works, and Samuel R. Lewis, Consulting Engineer.

The Flour Handling Clinic had

—"The Airslide Car" by John M. Gleason, General American Transportation Co.

—"A Miller's Experience with Bulk Cars" told by Lee Merry, Assistant Manager Durum Sales, General Mills, Inc.

—"Equipping the Macaroni Plant for Bulk Flour", William G. Hoskins.

On Practical Research, a Summary of information was given by the Hoskins staff.

—"Chemistry and Physics of Macaroni Products", reviewed by Glenn G. Hoskins;

—"Nutrition — What We Know and Should Learn", presented by Edith Linsley;

—"Principles and Mathematics of Egg Dosing", by Frank E. Johnson;

—"Controlling Condensation in the Plant", William G. Hoskins;

—"Drying—Progress and Probability", Charles M. Hoskins.

"Producing No. 5 Color Yolks for Noodles" was discussed by Richard H. Forsythe, Ph.D. Dr. Forsythe is chairman of the committee for Development of Standard Methods for Analyzing Egg Products and Director of Central Laboratories for Henningsen, Inc.

"How We Met the Durum Shortage" was described by Pierce U. Wheatley, Capital Flour Mills; "What We Have Learned" by S. F. Brockington, Quaker Oats Company.

"Building Sanitary Equipment" was the subject of Thomas L. Huge, American Sanitation Institute. This talk dealt with insanitary construction of equipment and was based on six years of sanitation service to macaroni-noodle manufacturers and many more years of practical experience.

Nat Bontempi read a paper describing the DeFrancisci vacuum process and a report of tests made by the Jacobs-Winston Laboratories. Paul Ambrette followed with a paper describing the Ambrette vacuum process and he also gave reports on tests of their machine.

In San Francisco the employee relations panel was repeated. Frank Viola of Golden Grain Macaroni Company, San Leandro told how "You Have to Work for Good Plant Morale".

Ed Brunken of the American Sanitation Institute discussed "Macaroni Plant Sanitation and Your Relations with the Food & Drug Administration".

Steam generation, transmission and heating problems were handled by a panel of experts: J. O. Martin of the J. O. Martin Company, San Francisco; R. L. Kreiss, the Crane Company; and Richard Lee of the Armstrong Machine Works.

On flour handling Vincent DeDomenico, Golden Grain, reported on "A Manufacturers Experience with Pneumatic Conveying"; Ralph Ball, General Mills gave "A Miller's Experience with Bulk Cars".

To the question "Are Blends and Hard Wheat Products Hurting Our Business?" Guido Merlino of Mission Macaroni Company, Seattle gave a sharp warning to his fellow competitors: he said, "We found the 50-50 blend satisfactory and were proud to sell it, in view of the disasterously short supply of durum. But we are alarmed to see the extent of blending with the blend here on the West Coast. We should be doing everything possible to attract customers with the best quality materials available. But by using cheaper substitutes on the grounds that there is a short supply anyhow will lose us customers and hurt the industry. Let's not get back to a condition we had during the '30's."

On packaging, D. D. "Steve" Brodie of Codie-Kay gave the "Principles of Weighing" and said that after four years of "having a bear by the tail" with their experiments on automatic long goods weighing they are satisfied that they have the answer. George Waldeisen of the Dobeckmun Company presented a technical discussion on "Techniques of Cellophane Printing." Bill Smith of Simplex Wrapping Machines gave pointers on greater efficiency in bag making operations.

The San Francisco Forum ended with a series of questions in the form of a final examination for the audience.

The following attended Chicago sessions but were not present for the picture:

Arthur Russo, A. Russo and Company; Paul Skinner, Skinner Manufacturing Co.; H. Geddes Stanway, Skinner Manufacturing Co.; Albert Weiss, Weiss Noodle Company; Harry Bystrom, Tharinger Macaroni Company; J. G. Leuhring, Tharinger Macaroni Company; Leo Buser, Delmonico Foods, Inc.; Tom Viviano, Delmonico Foods, Inc.; Bill Fieroh, I. J. Grass Noodle Co.; Mr. Carlton, Grocery Store Products Co.; Mr. Luther, Grocery Store Products Co.; Mr. Habenicht, Crane Company; John Gleason, General American Transportation Co.; John Drish, Illinois Bell Telephone Company; C. M. Burnam, Jr., Keeney Publishing Company; Lester Swanson, King Midas Flour Mills; Samuel R. Lewis, Samuel R. Lewis & Associates; Charles McWilliams, Food and Container Institute, Chicago OMC; Martin Morici, Chicago Macaroni Company; Richard Lee, Armstrong Machine Works.

The following attended San Francisco sessions but were not present for the picture:

Fred Spadafora, Superior Macaroni Company, (Los Angeles); A. F. Tudury, Refrigerating & Power Specialties Co. (Armstrong Steam Traps); Ralph Kreiss, Crane Company; Norman Barber, Fuller Company; J. O. Martin, J. O. Martin Company; J. M. Loughman, Capital Flour Mills; T. L. Brown, Commander Larabee Mills (Orinda, Calif.); Ralph Ball, General Mills; E. E. Hale, General Mills; E. C. Outman, General Mills; L. Reimers, General Mills; Al Rossotti, Rossotti Lithographing Corp.; Peter Burns, Rossotti Lithographing Corp.; Frank Falk, Rossotti Lithographing Corp.; Charlie Pope; Louise M. Hoskins.

AT NORTHWESTERN UNIVERSITY IN CHICAGO

IN THE TOP PICTURE, reading left to right, seated: Arthur Bauman, Tharinger Macaroni Company; Rita May Tharinger, Tharinger Macaroni Company; Dr. Richard Forsythe, Henningsen, Inc.; Clara Germer, Macaroni Journal; Charles Wilbur, Armour and Company; Vane Wheeler, Grocery Store Products Co.; Urbain Dicaire, Catelli Food Products, Ltd.; Meyme Rogen, Grocery Store Products Co.; Guido De Lisi, Catelli Food Products, Ltd.; Richard Schmidt, Crescent Macaroni & Cracker Co.; Pierce Wheatley, Capital Flour Mills; Edith S. Linsley, Glenn G. Hoskins Co.; Daniel Maldari, Donato Maldari; J. W. Sheetz, San Giorgio Macaroni Co.; John Linstroth, The Creamette Company. Standing, first row: Louis Sendrow, Prince Macaroni Co.; Sidney Grass, I. J. Grass Noodle Co.; Joseph Pellegrino, Prince Macaroni Co.; Hugo Preis, V. Viviano Brothers Mac. Mfg. Co.; Leo Ippolito, Ideal Macaroni Co.; S. F. Brockington, Quaker Oats Co. Research Lab.; Mike Volino, Grocery Store Products Co.; Anthony Sciano, Milwaukee Macaroni Company; Mike Pangallo, A. Palazzolo and Company; Albert Robilio, Robilio and Cunso; Al Davis, Crescent Macaroni & Cracker Co.; John Curry, C. F. Mueller Company; Paul Bienvenu, Catelli Food Products Ltd.; Tony Hylek, Kellogg Company; Alvin Karlin, I. J. Grass Noodle Company; L. P. Hower, San Giorgio Macaroni Company; Fred Birkle, Stuttgart, Germany; Leonard Bergseth, Kellogg Company. Standing, second row: Ray Wentzel, Doughboy Industries; George Cavanaugh, Quaker Maid; Thomas Huge, The Huge Company; Al Katzkee, Gooch Food Products Co.; Bob Cuno, The Huge Company; Alex Hapke, Grocery Store Products Co.; Don Nixon, Quaker Oats Company; Forest Wilson, Quaker Oats Company; Elmer Cross, Grocery Store Products Co.; Robert Freschi, Ravarino and Freschi; Arthur Quiggle, H. H. King Flour Mills; Omer Elsesser, C. F. Mueller Company; Joe Vitucci, A. Palazzolo and Company; Robert Reaf, Milwaukee Macaroni Company; Samuel Matz, Chicago Food and Container Institute of OMC. Standing, back row: Frank Johnson, Glenn G. Hoskins Company; Nat Bontempi, DeFrancisci Machine Corporation; Charles Hoskins, Glenn G. Hoskins Company; Fred Ebert, American Beauty Macaroni Co. (St. Louis); Michael Vagnino, American Beauty Macaroni Co. (Kansas City); Paul Ambrette, Ambrette Machinery Company; Mr. Beach, Beach-Russ Pump Company; Leo Reruche, Gooch Food Products Company; Robert Cowen, A. Goodman and Sons, Inc.; J. L. Tujague, National Food Products Inc.; Evans Thomas, North Dakota Mill & Elevator Co.; Ben Hansen, The Creamette Company; Oscar Garber, The Creamette Company (Winnipeg); Glenn G. Hoskins, Glenn G. Hoskins Company; Norman Risdal, King Midas Flour Mills; William Hoskins, Glenn G. Hoskins Company; Lee Merry, General Mills, Inc.

AT HOTEL ST. FRANCIS, SAN FRANCISCO

IN THE LOWER PICTURE, reading left to right, first row, seated: Louis Alberto, Superior Macaroni Company (Los Angeles); Conrad Ambrette, Ambrette Machine Company; Paskey DeDomenico, Golden Grain Macaroni Co. (Seattle); Vincent DeDomenico, Golden Grain Macaroni (San Leandro); Tom DeDomenico, Golden Grain Macaroni Co. (San Leandro); Robert Borelli, Fresno Macaroni Company; L. D'Amico, Budget Pack (Los Angeles); A. Bianchi, Bianchi's Machine Shop; Mr. Martinelli, Roma Macaroni Co. (San Francisco); E. M. Scarpelli, Porter-Scarpelli Macaroni Co. (Portland, Oregon). Second row, seated: Nick Forte, Mission Macaroni Company (Seattle) Richard Merlino, D. Merlino and Sons (Oakland); Peter Pence, General Mills, Inc.; Sam Zutler, Dobeckmun (Berkeley, Calif.); George Waldeisen, Dobeckmun (Berkeley, Calif.); P. F. Vagnino, Jr., American Beauty Macaroni Co. (Los Angeles); Julian Robbins, Grocery Store Products Co. (Los Angeles); Lloyd Ferrey, General Mills, Inc. (Los Angeles); Robert M. Hoskins, Dobeckmun (Berkeley, Calif.); Bill Smith, Simplex Wrapping Machine Division; Evans J. Thomas, North Dakota Mill & Elevator (Chicago). Back row, standing: R. A. Emini, California Vulcan Macaroni Co. (San Francisco); Don Knutsen, General Mills, Inc.; W. G. Hoskins, Glenn G. Hoskins Company; C. E. Finch, Pillsbury-Globe, Inc. (Los Angeles); D. D. Brodie, Codie-Kay (Los Angeles); J. Didonato, West Coast Macaroni Co. (Oakland, Calif.); Glenn G. Hoskins, Glenn G. Hoskins Company; Bill Hoffman, Golden Grain Macaroni Co. (San Leandro); Delmar Tysland, Golden Grain Macaroni Co. (San Leandro); Warren Powers, Golden Grain Macaroni Co. (San Leandro); Don Meeder, Woodman Company; Ed Brunken, The Huge Company (St. Louis;) Frank Viola, Golden Grain Macaroni Co. (San Leandro); Robert M. Green, National Macaroni Manufacturers Association; Robert William, Robert William Foods (Los Angeles); E. D. DeRocco, San Diego Macaroni Company; Guido Merlino, Mission Macaroni Company (Seattle).

HOW WE MET THE DURUM SHORTAGE

By PIERCE U. WHEATLEY, *Capital Flour Mills*
Presented at Plant Operations Forum VI

DURUM-HARD WHEAT blends have become an intregral part of the production of macaroni products here in the United States during this crop year of critical Durum shortage. Let us take a moment to look back and see what was done to meet and conquer the Durum Shortage.

We began to hear rumblings of a possible rust epidemic as early as the first part of June, 1953. By July 1st there was considerable concern about the rust threat. By August 1st there was little doubt in anybody's mind but what our Durum crop had been severely attacked by rust and that there was going to be a critical shortage of Durum Wheat. A joint meeting of Macaroni Manufacturers and Durum Millers was held in Chicago on August 14, 1953 to discuss this problem.

Government figures on the total supply of Durum that was available for the crop year ahead, adding the carry-over to the new crop estimate, indicated that we would have no more than half enough Durum for normal requirements of the Macaroni Industry. Accordingly, the Macaroni Manufacturers presented a resolution to the Durum Mills, requesting that Durum Mills furnish products milled from blends of 50 percent Durum and 50 percent Hard Wheat and to discontinue milling straight Durum products.

Long before this meeting in Chicago the Durum Mills were hard at work trying to find the best Hard Wheats for combining with the available Durum. Many samples were tested. There were a number of very important items that had to be considered in regard to each sample in determining whether or not that particular wheat would be the wheat we would use in our blends. These factors, in order of their importance, were as follows:

1. Gluten Characteristics
2. Color
3. Availability
4. Cost Delivered to our Mills.

It was next necessary to confirm our laboratory findings. After a careful consideration of the above factors several of the highest ranking Hard Wheats were decided upon. These most desirable Hard Wheats were purchased and moved to our mills for experimental production runs. These wheats were milled into flour, granular, and semolina or farina type products and these products were distributed to Macaroni Manufacturers for actual testing in their plants. The finished macaroni products from each type of wheat were then tested one against the other for color and cooking characteristics. We would like to thank the Macaroni Industry for their wonderful cooperation in making test runs on these different products. This enabled us to arrive at a quick answer as to which Hard Wheats in combination with 50 percent Durum produced the best macaroni.

This initial stage of wheat selection was only the start of this conversion from Durum products to Blended products. Once mills had selected the type of Hard Wheat they were going to use to produce their Durum-Hard Wheat blends they had to decide how they were going to mill these two different types of wheat. The size and shape of the wheat berry and the affect of tempering for good milling results are major factors to consider in doing an efficient job of milling. This problem was magnified this year because of the rust damage to the Durum crop. All the skill and ingenuity that years of experience had given our millers was drawn upon to mill out a good clean product from this combination of Durum and Hard Wheat. The problem was accentuated by the difference in test weight between the Durum and Hard Wheat. As most of you know, the effect of rust is to arrest full development of the Wheat berry—so the average Durum was of very light test weight. These small shrunken berries require very skillful handling in the cleaning and milling process.

The process of tempering or adding water is just as critical to a miller as it is to a macaroni manufacturer. These different types of wheat have different rates of water absorption. This was a tremendous problem with all mills and it was necessary for each mill to work out their own system of blending the wheats before milling or blending the finished products after milling in accordance with the way they could handle these blends to the best advantage on their particular mill.

We have pointed out a few of the problems of milling blends. We want to emphasize the fact, however, that we feel the most important factor in the production of satisfactory blended products is in the selection of the Hard Wheat to be used in these blends. There is a tremendous difference in gluten characteristics, color, and vitreousness of different types of Hard Wheat. We have taken great care to select the best available Hard Wheats. To show you the importance of this selection we would like to point out that we have seen macaroni products produced from Hard Wheat flours which went all to pieces when they were cooked. One of these samples in particular seemed to go to pieces on the outside while there was a hard core that remained in the center of the spaghetti tested.

We, the Durum Miller, don't claim to be experts in producing macaroni products but we do feel we know a little more about it than the hundreds of bread flour millers who have been after your business all year. We are continually watching these important factors of gluten characteristics and color, and are doing everything within our power to provide you with the best and most consistent quality blended products it is possible to produce.

We sincerely hope that the Durum crop presently being planted will be of sufficient quality to enable us to go back to straight Durum products. We now know, if we never knew before, that Durum products are by far the best raw material for macaroni production. The only way the Macaroni Industry can be assured of full public acceptance of its products is by using the highest quality raw material. Macaroni made from Durum products will give Mrs. Housewife the best cooking quality and flavor, as well as being a nutritious, healthful food.

4 Plant Projects to Increase Output of DuPont Cello

Projects under way at four plants will increase production of DuPont cellophane by nearly 25,000,000 pounds before the end of this year, officials here predict.

Increased output will result from modernization of equipment and application of latest technology in cellophane production, it is claimed by E. I. DuPont de Nemours and Co. As additional modernization techniques are adopted, production is expected to increase further before late 1955.

Self-service merchandising, particularly in the food field, was cited by DuPont as a determining factor in the increased demand for this product.

Since producing the first American-made cellophane 30 years ago, DuPont has raised the manufacturing capacity every year, except during the war. Cellophane-processing plants are located in Buffalo, N. Y., Old Hickory, Tenn., Richmond, Va., and Clinton, Iowa.

A MILLER'S EXPERIENCE WITH BULK CARS

By LEE MERRY, *General Mills, Inc.*
Presented at Plant Operations Forum VI

GENERAL MILLS pioneered in moving flour pneumatically from point to point in the mills, and also in the last few years has pioneered in the field of bulk carloading, with bulk shipments being moved in various types of cars to our packaging plants. Railroads and manufacturers of equipment have cooperated with General Mills for many years in solving the problem of bulk flour handling, and as a result bulk handling has been developed to the point where it is now a reality for macaroni manufacturers.

We have successfully used pneumatic transfer of flour within a plant since 1947. Our Los Angeles mill, built in 1948, is completely pneumatic and flour moves through plastic and metal pipes under air pressure instead of through the conventional elevators and conveyors.

At one location we handle flour by air in an *underground "pipe line"* to move product from one building to another under a number of railroad tracks and over 100 feet of intervening space, then lift it 125 feet to a storage bin. We have successfully piped flour by air from railroad cars to the top of a 5-story storage bin. It is feasible to move flour (or Semolina type products) in bulk through pipelines for several hundred feet with the same equipment that is used for unloading bulk cars into plant storage bins.

We know of one situation where flour is being piped 800 feet through a 6-inch pipe line from an unloading point on a siding to a storage bin in a warehouse.

Several installations are necessary in a mill to adapt for loading bulk cars. A re-flowing of the mill is required to spout production away from the conventional flour packers into a weighing bin equipped with precision dump-scales and from there into the various hatches in the top of the bulk car. A series of flexible spouts is required for filling the cars from the master tube as loading is accomplished through several hatch openings instead of through a single opening.

Special preparation of the interior of each new bulk car is necessary. The inside is carefully sandblasted for smoothness, then completely covered with a penetrating, hard-surface plastic wax to prevent particle clingage.

Special adapter unloading nozzles are required for each car. This is a separate installation for prompt and efficient unloading.

All of these special facilities for bulk unloading are required in addition to the maintenance of conventional packing systems for Semoblend and flour still packed in bags.

After bulk cars are loaded at the mill they are promptly switched to an official railroad for check weighing, and these weights are used for freight billing and checking with our own record of loading.

Occasional checks of bulk cars are made at destination to see if improvements in mill loading can be made. Such information that the load settled about 6 inches in transit and that the inside temperature of the shipment varies little while in transit from time of loading, is of interest. The excellent condition on arrival of cars at destination has been gratifying, and adds impetus to the belief that bulk shipments are practical and efficient.

General Mills' experience with bulk cars has basically been confined to three types of equipment:

1. We originated the use of covered hopper-type cars for shipping bulk flour. These are converted cement cars that were adapted for flour use, and we have a number of these cars in use today between our flour mills and cereal blending plants.
2. The Trans-flo car was developed by the General American Transportation Corporation. It is basically a several compartment flour bin on a rail car—and it holds 100,000 to 110,000 pounds. It is filled through hatches at the top and is unloaded by a pneumatic system attached to the bottom of the car which moves the flour by air into suitable storage.
3. The Airslide Car, also developed by General Transportation Corporation, is a practical and economical unit adaptable for use in transportation of Semolina and flour.

Working with bulk handling of flour products over the years has made us tremendously enthusiastic over its possibilities for the future. We believe that in the near future most Macaroni plants who handle reasonably heavy volume will avail themselves of the convenience and savings that bulk handling provides. It is adaptable in some form to almost any plant layout, either new or old.

If your plant is not located on a railroad siding you can avail yourself of bulk truck delivery, if sufficient volume is involved, at approximately the same cost that the cartage companies charge for handling sacked Semolina or flour.

There are at present 4 basic designs for bulk flour trucks. These are:

1. Trans-flo (Similar to rail car).
2. Airslide Pneumatic (Similar to rail car).
3. Screw-pneumatic (Similar to Airslide with screw conveyor adaptions).
4. Dump (Enclosed tank-like body that can be raised at one end for gravity discharge).

Some bakeries whose building layouts are not adequate or practical for inside large bulk storage units, have converted to TOTE bins (about 3,000 pounds each) for inside bulk storage. The bins are filled from an overhead screw conveyor that serves a dozen or more bins at once with the flour from a bulk truck being fed into the conveyor arrangement.

We have been talking mostly about the advantages of bulk handling of Semolina and types of flour; but what are the angles on the debit side of the ledger? In general they are:

1. The *initial* investment. *It is expensive!* This is a simple matter of cost accounting. What does your present system of handling flour cost, and what would the proposed system cost? Even though the economics work out to minor cost savings, the *intangible* advantages of *sanitation* may still make bulk handling desirable.
2. Limitations in selection of sources of supply—but competition in the milling business will insure the Macaroni manufacturer that he has nothing to fear in that respect, and in any event, any unloading system should still provide for the handling of product in sacks which, of course, would be available from all mills.
3. Minimum shipments approximately 1,000 cwts. Only one grade is available in each car. Inconvenience when ordering special grades for special products if smaller quantities are needed.

General Mills takes great pride in being pioneers in the field of bulk loading and no doubt you have seen the General Mills' page ad in this month's issue of the Macaroni Journal which announces our readiness to service you with Airslide Bulk Cars.

The Glenn G. Hoskins Company are to be congratulated in their forward planning and untiring efforts to make bulk handling become a reality for the Macaroni Industry. They have kept abreast of the times and have stimulated equipment people to make available the equipment needed. Through their research and experience they have acquired the engineering knowledge necessary for the installation in Macaroni plants and have contributed a great deal to make this revolution in flour handling possible.

WILLIAM HOSKINS

CONVEYING AND STORING FLOUR RECEIVED IN BULK

By WILLIAM G. HOSKINS, G. G. Hoskins Company,
Presented at Plant Operations Forum VI

WE are on the threshold of something truly tremendous in this program of bulk handling of flour. Several weeks ago, one of the chief engineers of one of the largest freight car manufacturing companies in the world called on us in Libertyville to talk about the potential market for a special car to handle flour and other food products in bulk and to go over design features that would be important to users of the cars.

We got to wondering just what the total market on these cars might be for the car manufacturers. We started to figure this out for flour alone on the basis that there are about 160,000,000 people in the United States and they use somewhere around 150 pounds of flour products per year. Bulk cars will handle about 80,000 pounds of flour per carload and it is reasonable to expect that each car could average about 30 trips per year. On this basis, then, flour-using industries alone would require 10,000 bulk cars.

Naturally, the techniques of bulk shipment and in-plant storage and handling of flour can be applied to other food products—sugar, for instance and possibly many others. The quantity of sugar transported in this country runs to tremendous tonnages. The costs incurred handling sugar are probably very much the same as for flour and other materials handled in sacks. The potentialities for saving run into millions of dollars. The convenience to users in not having to have the sacks will be extremely worthwhile.

The bulk shipment of flour has been a long time coming to its present stage of development where substantial numbers of bulk shipments are actually being made. Even now, the number of cars engaged in bulk shipping of flour is insignificant compared with the total shipments at present taking place in sacks. Probably the Number One obstacle to bulk handling is the expense of providing the users' plants the means for unloading flour from the bulk storage equipment itself and means for conveying from bulk storage into presses. There is a lot of money involved in this equipment, enough so that a manufacturer must be careful lest the depreciation and maintenance costs on his bulk handling system offset the savings on sacks, labor, siftage and shrinkage.

On the other hand, a bulk handling system does not have to be in the $100,000 to $150,000 class. It is conceivable that a small plant that could get along with just two storage tanks, each holding a carload of flour, could get a pneumatic unloading and bulk storage system complete for somewhere around $50,000. If this could be done, the manufacturer who handled 6,000,000 pounds a year through such a system could save about $10,000 per year by using the system and could pay for it in savings in 5 years. Bulk handling is within the range of possibility for many macaroni manufacturers.

This paper is on technical points of bulk car unloading and storage of interest to the manufacturer who is contemplating bulk handling. We are now at the point where we can, if we are able, to unload and store it, buy flour in bulk. Let's see what we have to do to get the flour to the press.

Getting It Out of the Car

The bulk car that has emerged as the most logical choice for flour seems to be the General American Airslide Car. Actually, both the GACX cars and converted standard covered hopper cars are presently in use with flour. Both of these cars can be arranged so they will unload through the bottom and drop their load into any sort of conveying means that seems practical.

Experience has shown that the converted covered hopper car is more satisfactorily unloaded by means of a suction nozzle lowered into the car from above. The Airslide Car can be unloaded this way, but it can also be unloaded into a screw conveyor below the two bottom hatches or into a nozzle on an air conveying system.

One objection to the covered hopper car is that the nozzle put in from overhead requires the constant attention of an operator, while the Airslide Car can be hooked up and allowed to unload unattended.

When a manufacturer expects to unload Airslide Cars, he must equip his plant with a Roots-Connersville type positive pressure blower requiring about a 5 to 7½ H.P. motor. This blower will furnish air at approximately 2 to 3 pounds per square inch pressure to a special fitting on the Airslide Car. The air bubbles up through the airslides in the car and causes the material to flow toward the outlets. Airslide cars can be equipped with fixed nozzles so that all the user has to do is to attach a 5-inch diameter suction hose and open the gates to set the system into operation.

One advantage of the Airslide Car is that the bottom discharge openings are approximately 14 inches above the level of the tracks, as compared with 9 inches or less on the covered hopper car. This clearance makes it possible to put the special air nozzle under the car, or even to slide a screw conveyor on tracks out under the discharge hoppers. This last arrangement is practical where the plant has a basement and material picked up by the screw conveyor can be delivered through a sifter into an elevator to storage bins.

It is also possible to make a connection so that material from the car drops into a hopper on some sort of a conveyor, such as a screw conveyor, underneath the tracks. The objection to this is that the installation of screw conveyors and screw elevators requires the building of a special reinforced room under the tracks. The cost of the room might be enough to offset any saving that might be occasioned by the use of screw conveyors compared to pneumatic conveying equipment.

Pneumatic Conveying Flexible

From the standpoint of flexibility, sanitation and convenience, suction pneumatic conveying systems seem to be the most logical means for unloading bulk cars. The suction system is flexible in that it can be used to connect to a nozzle on the discharge of an Airslide Car, or it can connect to a portable dump hopper in a car where bags are being dumped, or the suction connection can even attach to a dump hopper where bags are being dumped inside the building.

The earlier requirement for extremely high pressures needed on the General American Transflo Car is no longer present with the Airslide Cars. On the Transflo Car, high suctions are necessary in order to break the material loose in the car. With the Airslide Car, the airslides cause the material to flow out of the discharge openings of the car without restriction. Only enough suction is required to entrain the material into the air stream. Therefore, the need for the extremely heavy equipment with its consequent high horsepower has been reduced.

The equipment to unload an Airslide Car can be provided by quite a number of companies, among them Sprout-Waldron, Fuller, Dracco Corporation and a number of others. Car unloading systems which will withdraw material from the Airslide Car at the rate of 20,000 Lb./hour are available for under $10,000. Of course, this price includes only the suction system for getting the material out of the car and delivering to a sifter or a weigher. As a matter of interest, the system where this cost of $10,000 applies has a 40 H.P. motor on the car unloading equipment and conveys approximately 20 feet horizontally and 80 feet vertically.

Important To Check-Weigh

One important feature of the bulk handling system which a manufacturer should not neglect is a means of checking weight of material received in the car. It is not practical to let the railroads check-weigh the car. You will frequently find that a day's time will be lost in having a car check-weighed and it will cost you between $6 and $15 for weighing. It does not take many cars before a good in-plant check-weigher is paid for.

One of the means of checking weight of material received in cars is the Richardson bulk flour scale. This is nothing more than a simple scale with a large capacity bucket. In a system where one is handling 20,000 pounds per hour, a 300 pound scale is about the right size. Such a scale equipped with a counter to record the number of dumps made by the machine can be purchased for around $3,200. Accuracy of this scale is guaranteed at plus or minus 4 ounces in 300 pounds and would give a very accurate recording of weight received.

Another device for check-weighing is the new Mass-O-Meter developed by Wallace and Tiernan. This device operates on an inertia principle and continuously records on a chart the material handled through the device. The drawback to the Mass-O-Meter for use with bulk flour systems at the present time is that the only available models are limited in capacity to approximately 200 pounds per minute or 12,000 pounds per hour. Accuracy of the Mass-O-Meter is guaranteed at plus or minus 1%.

Wallace and Tiernan also has a Merchen feeder similar to the feeder in use on many macaroni presses. This unit is equipped with a continuous recording chart and an integrator which totals the amount of material handled through the system. One advantage of the Merchen feeder is that it is less than 2 feet in overall height as compared with 8'-6" for the Richardson scale of 300 pound capacity. A disadvantage of the Merchen feeder is that it is only guaranteed for an accuracy of plus or minus 1%. It is our feeling that this degree is not sufficient for check-weighing the loading of a car. Plus or minus 1% accuracy means that in a car of 800 sacks, weight could be 8 sacks off.

Sifting

There are a number of sifters suitable for screening material delivered through a pneumatic system unloading from a car. Most of the sifters which are big enough to handle material at the rate of 15,000 to 20,000 pounds per hour are so big that they require a very solid base. For example, a Day-Ro-Ball sifter which will handle 15,000 pounds per hour weighs approximately 2,000 pounds. Naturally, this sifter has to have a gyratory motion and it requires a substantial structure to support it. This becomes a rather critical problem in bulk handling systems since the storage tanks for flour normally extend quite a way into the air.

Unloading Rate

One of the things that determines the cost of bulk handling system is the rate at which it handles material. Naturally, a system for unloading cars at 15,000 pounds per hour will require a smaller motor, air filter and ducts than will a system with a capacity for unloading 10,000 pounds per hour.

The problem, therefore, becomes one of keeping the unloading rate as low as possible while at the same time permitting flexibility in the operation of the system. In a number of cases we have found that unloading rates of 15,000 to 20,000 pounds per hour were satisfactory. Twenty thousand pounds per hour permits unloading an Airslide Car in approximately 4 hours. Since it is sometimes practical to use the same blower for unloading cars and conveying from bulk storage into press hoppers, a 20,000 pound per hour system could unload a car and then fill press hoppers and then unload another car all in the space of one day. Of course, the unloading rate has to be set on the basis of what the system is expected to do.

Bulk Storage

The key to the cost of a bulk handling systems is the amount of bulk storage actually required. The tanks themselves may not be a major part of the total cost. However, as the number of tanks increases, so does the complexity of the conveying equipment and the size of the building to house the tanks.

It stands to reason that the smaller the total quantity of bulk storage capacity can be kept the lower the total cost of the bulk system.

The ideal situation would be one in which there would be just enough bulk storage capacity to store one carload of flour. This could be done, theoretically, if the arrival of bulk cars could be scheduled so that a car would be on hand just as the tank became empty. We all know that this is not practical. Yet, might it not be possible to have enough storage capacity for two cars, for instance, and keep that storage capacity very active? Two cars capacity, on a big operation, would not provide enough of a factor of safety to handle peak operation periods, or to allow for delays in shipments that might be incurred due to snow storms, strikes or other trouble.

We encountered the necessity, recently, to try to design a bulk handling sytem at the lowest possible first cost. The particular company for whom we were designing the system had a policy that they required an unusually high return on any investment that they made for "efficiency" purposes. The theory we are using to work this system out is that we will assume they can so schedule the arrival of their bulk cars that they will be able to handle 75% to 80% of their total requirements using only enough storage capacity for two carloads of flour. They are far enough from the mills that it is not practical for them to be caught with only one or two cars of flour on hand. Therefore, we will recommend that they keep another five or so carloads on hand in sacks. Material in sacks will be used up slowly, turning it over possibly once a month. Most of the flour or semolina handled, of course, will go through the bulk system.

The effect of the above system is that this company will, if the final prices are anywhere close to the estimates, be able to realize a return on their investment of 50% per year.

Normally, when we calculate the space required in the macaroni plant for flour storage, we use the rule of thumb that the plant should have 5 days' production storage plus one day's storage capacity for each day that the plant is distant from the mills. By this method of calculation, a plant in Chicago should have storage capacity for 7 to 8 days' production. In a plant of any size, it can be seen that the amount of storage capacity required is quite great. With sacks this is no problem because they can be put almost anywhere. With bulk storage, it is entirely possible that this requirement for a great deal of storage capacity will make the installation of bulk handling equipment so expensive that the savings would not justify the cost of the system.

Tanks and Bins

There are a number of devices that

can be used to store flour in bulk. The most practical seems to be round tanks 8 feet or less in diameter with conical bottoms. An 8-foot tank to hold a carload, or 85,000 pounds of flour, would require a total overall height of approximately 72 feet. The conical bottom of the tank should have one straight side and the slope of any other part of the cone should not exceed 70° from the horizontal.

The most practical means for discharging material from bulk bins such as that described above seems to be a twin screw discharge feeder. The twin screw discharge feeders present a fairly large surface to the bottom of the flour load in comparison, for instance, with a rotary valve which would have an opening approximately 10" x 10". The twin screw feeder would have an opening approximately 18" x 24" and would, therefore, tend to discourage the problem of bridging. Unloading of tall flour tanks is a rather critical problem. Semolina is not so bad, but flour tends to pack at the bottom of the tanks and unless it is agitated or perfectly free to descend in the tank without interruption, there may be a tendency to bridge. There have been many instances of installations of beautiful new bulk tanks which were soon bent out of shape in the hopper section by sledge hammers used to cause the material to resume flowing.

We pointed out earlier that an 8-foot tank with sufficient capacity to hold a carload of flour would extend 72 feet up into the air. We do not like this height. We would much prefer to keep the overall height of the tanks down. However, bitter experience has shown manufacturers of tanks and manufacturers of flour handling equipment that larger diameters do cause trouble. This is especially true where tanks are unloaded by means of ordinary screw conveyors.

Possibility of Bigger Tanks

General American Transportation Corporation several years ago built a tank which was approximately 20 feet in diameter. The purpose of the experiment was to see whether flour could be stored in a tank erected outside without a building around it. The experiment was either abandoned or at least put on the shelf because the baker that tried the tank out did not feel that he was able to keep his flour at the proper temperature to insure best results. The tank that General American built was equipped with special hopper bottoms.

We have been plagued by the problem of the height of the 8-foot tanks to hold a carload of flour and we would like very much to see someone develop a means of unloading a larger diameter tank which would permit the use of a shorter tank. Actually, we feel that such a means of unloading is available and simply requires someone to try it out. The Fuller Airslide could be applied to the bottom of a 15-foot tank, for example, with four Airslides in a star fashion at the bottom discharging at the center. The hopper bottom section of this tank would be relatively shallow and so would the cylindrical portion.

Airslides for Tank Unloading

Airslides make a practical means of unloading tanks. However, the Airslide cannot be used in a tall bulk tank without some check valve such as a rotary airlock to control the flow out of the Airslide. Experience has shown that the Airslide can cause a tank to "flush". This flushing action can be quite disastrous. When a tank flushes, the materially suddenly becomes aerated and flows out of the tank like water. Very tight valves are required to stop this flow—screw conveyors won't do.

As a matter of interest, we recently had an opportunity to get prices on some 8-foot diameter tanks, each having a capacity of 85,000 pounds of flour. Four such tanks can be purchased for around $11,500 not erected. This price does not include the discharge feeders which are worth about $1,000 apiece.

Another practical means of storing bulk flour in the plant after it has been received in bulk cars is the aluminum Tote Bin. The Tote Bin has been in use for quite some time and has proved satisfactory. The Tote Bin is made in several sizes, the most common of which will hold 74 cubic feet, or about 3,000 pounds of flour. The tote Bin is handled by means of a special fork lift truck. It is placed on a tilting mechanism for dumping.

One of the advantages of the Tote Bin is that the car unloading system can be kept relatively simple and the in-plant conveying equipment can be practically non-existent. Bins can be placed directly above presses to feed by gravity into the presses.

It would seem that use of Tote Bins would require a little labor and thereby cut down the savings in the bulk handling system. This is not necessarily true because one man with a fork lift truck can move a lot of flour at 3,000 pounds per load in a very short time. After a Tote Bin has been placed above a press for unloading, it will take care of the press's requirements for three hours without attention.

Tote Bins are generally practical only where existing building space is available for storage. If additional building space is required, it would be much less expensive to install some vertical round tanks and build a light weight building to house the tanks.

There are other means available for storing flour in bulk. We have been advised recently that the Day Company of Minneapolis has developed a horizontal tank which will store approximately 42,000 pounds of flour. This tank, complete with discharge screw conveyor is reported to sell for about $3,600. There have been horizontal tanks in use for a long time. There are many of them in macaroni plants. The disadvantage of them for bulk handling is that their cost is about two to three times that of the round tanks. They are also difficult to clean.

Temperature Loss in Tanks

Actually, steel tanks could almost be left out in the open for storing flour or semolina for use in the macaroni plant. Tests on the bulk cars have shown that in most shipments of flour in the winter in uninsulated cars the temperature loss over a period of 8 days is only about 2 degrees. This would indicate that flour stored in a bulk tank would lose temperature very, very slowly.

The problem comes when one tries to put the warm flour taken out of the bulk car into a cold tank. There is a definite possibility that condensation will occur on the inside surface of the tank and cause flour to cling to that surface. It is for this reason that we recommend the installation of bulk tanks outside existing buildings with a light construction building for housing the tanks. Some heat can be provided inside the enclosing structure to keep the surface of the tanks warm. Also, as flour is drawn out of the tanks, warm air will enter the top of the tanks and fill up the space about the flour, thereby eliminating the possibility of condensation.

There are a number of modern materials of an attractive nature that can be used for constructing buildings to house tanks. One such material is Cemesto board made by the Celotex Corporation. This material consists of a sheet of Celotex with layers of material on either side similar in nature to Transite, weatherproof and suitable for construction.

The Cemesto board makes the complete wall, providing insulation and strength. Cemesto comes in 4 x 8 foot panels and can be erected on a relatively light steel frame.

Another possible material to be used in light-weight buildings is the insulated aluminum panel as made by the H.H. Robertson Company and others. These panels are corrugated in an attractive manner so that the finished building looks nice. There are generally two layers of aluminum with some sort of insulating material between. The procedure with this material is to erect a light-weight steel frame and fasten the aluminum panels to the frame. Construction of a building of this nature can be kept as low as $1.50 to $3.00 per square foot of wall surface.

Butler buildings made from either galvanized sheet metal or aluminum panels might also be practical for low-cost tank housing. In any case, our research has shown us that a building of sufficient size to house four 85,000 pound tanks, 72 feet high can be erected, including foundation for the walls and tanks, for under $10,000.

New techniques for bulk handling

(Continued on page 33)

PAUL and CONRAD AMBRETTE

THE AMBRETTE VACUUM SYSTEM

By PAUL AMBRETTE, *Ambrette Machine Corporation, Presented at Plant Operations Forum VI*

THE question uppermost in the minds of most macaroni manufacturers today is "Why should we vacuumize our continuous presses for long and short cut goods?". The answer is reasonably simple—to deaerate the dough in order to get a better macaroni product in color, texture, cooking and eating characteristics.

In order to produce the above improved characteristics, we must remove the atmospheric pressure (air) surrounding the dough and entrapped in the dough before the macaroni is formed by the die.

In our vacuumized continuous presses, we mix the flour and water in a long mixer and pass the dough by our patented rotary self-sealing feeder into a vacuumized chamber cast as a unit in aluminum. This cast construction is necessary to reach a relatively high vacuum and to prevent this vacuum from fluctuating through leakage and a non-positive feeding mechanism.

The long mixer is of adequate length to assure sufficient mixing time so that the water can penetrate each particle of Semolina by abrasive action to guarantee a well mixed dough.

Experience has proven that if the mixing cycle is kept completely independent from the combined vacuumizing and extruding cycle, a higher and more effective vacuum can be obtained before extrusion.

We have maintained these two cycles independently and have connected them by means of our patented rotary self-sealing feeder.

This patented feeder expels small quantities of premixed dough directly into the vacuumized chamber. This chamber is much smaller than the mixer and therefore is easier to keep tight and to maintain a high vacuum.

By this arrangement (rotary feeder) a set quantity of dough is fed into the vacuumized chamber at a constant rate which is as fast as the extrusion screw can handle it. This method enables only the dough, already mixed, to get full advantage of the vacuumized chamber.

Under high vacuum we deaerate as thoroughly as possible in order to eliminate the air which has caused in the past a macaroni product which is rough, weak in structure and poor in color. Therefore, it follows that the higher the vacuum the greater the elimination of this air—the better the product.

The effect of the vacuum on the premixed dough is the most important aspect to be considered in the above cycle. Here, we feel we must stress the basic physical factors involved in deaerating any product.

Atmospheric pressure is barometric pressure at any specific geographical location. Under average conditions at sea level, this pressure is 14.7 pounds per square inch and this pressure decreases with altitude. A city, for instance, at 5000 ft. altitude would have a reduced pressure of approximately 2.5 pounds or approximately 12.2 pounds per square inch of atmospheric pressure.

Vacuum deals with any pressure lower than the surrounding atmosphere.

Air at 14.7 pounds per square inch at sea level is equal to zero vacuum on a common dial vacuum gauge. When we have completely eliminated this atmospheric pressure (air), the dial vacuum gauge will read 30 inches at sea level. This relationship shows us that each pound of reduced atmospheric pressure (air) equals approximately 2 inches on the dial vacuum gauge. Therefore, 15 inches on the dial vacuum gauge represents approximately 7.5 pounds of air of ½ of 1 atmosphere. We have prepared the following table for simple understanding of the presence of the remaining air indicated by the dial vacuum gauge on a vacuumized chamber.

Vacuum Gauge Reading (Mercury)	*Atmospheric Pressure Remaining*
0 inches	14.7 lbs.
15 "	7.35 "
18 "	5.9 "
20 "	4.9 "
23 "	3.4 "
25 "	2.5 "
26 "	1.9 "
30 "	0 "

Now it is easy to understand that at 20 inches of vacuum you have more than 2½ times the amount of air pressure than at 26 inches of vacuum. It is apparent from the above table that unless a relatively high vacuum is produced and maintained, considerable air remains and we are therefore defeating our purpose in vacuumizing.

To complete this understanding we must comprehend what happens to air under vacuum when the dough is fed into the vacuum cycle. Air has been entrapped in the dough. Removal of this air is accomplished by the expansion of this air in the vacuum. One cubic foot of air entering the vacuumized chamber will expand two times its own volume under 15 inches of vacuum; three times its own volume under 20 inches of vacuum; and seven and one half times its own volume under 26 inches of vacuum. Therefore, you can see that any entrapped air in the dough is more easily removed at the higher working vacuum. At 26 inches of vacuum, the removal of this air at this high expansion rate is instantaneous.

An added advantage of our vacuum system is having this continuous high vacuum present on the small bulk quantities of dough which is being fed by our rotary feeder and allows the air to expand immediately and be carried off in the most direct manner. By other methods, there is always the possibility of the product being extruded prior to a thorough deaeration.

The benefits of a high vacuum system, as we have already explained, can only be accomplished with a tight system. In order to eliminate air leaks that can occur in a vacuumized chamber that is bolted together, we have cast, as a unit, our small vacuumized chamber in aluminum. The casting of this chamber guarantees an airtight unit for most of its internal contour. On top we have a vacuum tight plexiglass cover to allow a full view to the operator of the agitating, vacuumizing and feeding of the dough to the extrusion screw. The rotary feeder shaft and the agitating shaft of the vacuumized chamber have vacuum tight seals. Recessed in the extrusion housing is a vacuum tight seal holding on the hub of the extrusion screw. The vacuumized chamber and the extrusion housing are fitted together by a machined fit and bolted together with many bolts to assure a vacuum tight seal.

Hand in hand with a tight system, we require a vacuum pump with sufficient capacity and efficiency at the working vacuum. Our extensive experiments have proven to us that the Beach Russ pump gives us the best results from a practical and economical standpoint. We noticed that to operate above 25 inches and to still deaerate that we needed an oil seal rotary vacuum pump to attain the working vacuum of 26 inches at which we are operating. To get this 26 inches of vacuum, it is definitely necessary to have a tight system and a good pump.

No one will doubt that the air is the thief which has been robbing the macaroni products of their good inherent characteristics which are so desirable to have in their entirety. This air which is now entrapped in the dough and entrapped by the pickup motion of the extrusion screw is the culprit which causes the damage. This air compressed and heated by the pressure created by the extrusion screw causes oxidation which spoils the natural color of durum wheat. This same compressed air explodes out of the macaroni immediately upon leaving the die, giving it a rough exterior and a weakened structure.

Vacuumed macaroni, being stronger structurally because we have eliminated the larger air bubbles now visible under a microscope, is a more dense and compact product which is easier to dry satisfactorily. The drying time has been cut approximately 10% to 15%.

Vacuum has also increased the productivity of the continuous press by approximately 10%.

This system working at High Vacuum performs with the automatic features that the operator has been accustomed to for many years. The only moving part is the rotary self-sealing feeder which is coordinated automatically with the long mixer and thus needs no adjustments.

The flour and water adjustments remain the same. What was our small mixer is now the vacuum chamber with a plexiglass cover on top and a vacuum and gauge connection on the side.

Therefore, the transition from a non-vacuum continuous press to a vacuum operation does not effect the operator. This system is simplicity personified.

We must now conclude that in order to get the best possible macaroni, we need the highest practical working vacuum to obtain:

INCREASED PRODUCTION
BETTER DRYING CONDITIONS
A SMOOTHER PRODUCT
A STRONGER PRODUCT STRUCTURALLY
A BETTER LOOKING PRODUCT
A BETTER COOKING PRODUCT
A BETTER EATING PRODUCT

Our experiments have demonstrated that with every increase in vacuum we noticed an improvement in the product. Therefore, it is common sense, "THE HIGHER THE VACUUM THE BETTER THE MACARONI".

Roche Uses Cross-Country Phone During Sales Meetings

A coast to coast telephone network was the feature climaxing the sales meeting and banquet held May 3rd to 7th for sales representatives of the Hoffman-La Roche Vitamin Division at the Skytop Club, Skytop, Pennsylvania.

W. Frank Alexander the Vitamin Division sales representative in San Francisco, who covers California, Oregon and Washington, won the President's Top Ten and Barell Awards for outstanding sales achievement in 1953. But because of an illness which confined him to his home, he was unable to take part in the award ceremonies at Skytop. Instead, Mr. P. J. Cardinal, Vice President in charge of the Vitamin Division, arranged a telephone hook-up between Skytop and Mr. Alexander's home in San Rafael, California. Present were Mr. Alexander's wife, mother and father. Mr. John Tiedemann, who had been deputized by Mr. L. D. Barney, President of Hoffmann-La-Roche, presented the awards.

Also participating in the multiple hook-up from the Skytop meeting were the offices of L. H. Butcher Company, Roche Vitamin Division sales distributors on the West Coast, at La Angeles, San Francisco, Seattle, and Portland.

The ceremones and conversations were also carried to Mr. Cardinal's home in Montclair, N. J. where the Vitamin Division office staff and executives' wives were gathered to hear the proceedings.

After the awards were presented to Mr. Alexander, President Barney made Mr. Cardinal an honorary member of the President's Top Ten Club in recognition of his distinguished leadership and sales achievement. Mr. Cardinal, who was appointed Vice President in charge of the Vitamin Division in 1948, will complete 30 years of service with Roche in July.

During the sales meeting the complete executive, administrative, and technical staff of the Vitamin Division conducted an accelerated training program and analyzed new developments in the use of vitamins in drug preparations and in restoration and fortification of processed foods.

EXECUTIVES AND SALES REPRESENTATIVES of the Hoffmann-La Roche Vitamin Division at their annual meeting, May 3-7, at Skytop, Penna.

Fuller Offers New Bulletin On Pneumatic Flour Handling

The Fuller Co., Catasauqua, Pa., offers a new 16-page, two-color bulletin covering applications of the company's Airveyor System in the pneumatic handling of flour.

Entitled "Flow Your Flour", the bulletin explains and illustrates how the Airveyor System pneumatically conveys flour from carriers to storage, and from storage to processing. Included is information on how the system eliminates bagging costs and cuts labor costs while providing sanitary, dust-free handling.

The bulletin describes and illustrates 5 typical installations—the Enrich Baking Co., Minneapolis; the Canada Bread Co., Toronto; American Stores, Philadelphia; V. LaRosa & Sons Inc., Danielson, Conn; and the National Tea Co., Milwaukee. Illustrations include 26 pictures and 5 schematic drawings.

Also given in the bulletin is information on the Fuller-Gramm truck especially designed for hauling flour in bulk. The truck is engineered for quick loading and for unloading by the Airveyor system.

To obtain copies of this Bulletin—No. AF-100—write to Fuller Co., Catasauqua, Pa.

Uneasy Decimal

"The decimal point leads a restless, uneasy life in the Federal Government. Those groups of three ciphers which are separated by commas are moving steadily to the left."—Herbert Hoover.

Bulk Flour —

(Continued from page 30)

and for conveying flour in bulk, both pneumatically and by other means, are well proved by extended use. Many macaroni manufacturers are considering seriously going into bulk handling. We are very enthusiastic about the possibilities of bulk handling because of the saving that can be realized by our clients who are able to put the systems into their plants. They can save space, their plants will be more sanitary, and, most important of all, they can realize substantial savings in dollars if systems are properly engineered and they do not cost so much that depreciation offsets the savings.

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Experience has proven that if the mixing cycle is kept completely independent from the combined vacuumizing and extruding cycle, a higher and more effective vacuum can be obtained before extrusion.

We have maintained these two cycles independently and have connected them by means of our patented rotary self-sealing feeder.

This patented feeder expels small quantities of premixed dough directly into the vacuumized chamber. This chamber is much smaller than the mixer and therefore is easier to keep tight and to maintain a high vacuum.

By this arrangement (rotary feeder) a set quantity of dough is fed into the vacuumized chamber at a constant rate which is as fast as the extrusion screw can handle it. This method enables only the dough, already mixed, to get full advantage of the vacuumized chamber.

Under high vacuum we deaerate as thoroughly as possible in order to eliminate the air which has caused in the past a macaroni product which is rough, weak in structure and poor in color. Therefore, it follows that the higher the vacuum the greater the elimination of this air—the better the product.

The effect of the vacuum on the premixed dough is the most important aspect to be considered in the above cycle. Here, we feel we must stress the basic physical factors involved in deaerating any product.

Atmospheric pressure is barometric pressure at any specific geographical location. Under average conditions at sea level, this pressure is 14.7 pounds per square inch and this pressure decreases with altitude. A city, for instance, at 5000 ft. altitude would have a reduced pressure of approximately 2.5 pounds or approximately 12.2 pounds per square inch of atmospheric pressure.

Vacuum deals with any pressure lower than the surrounding atmosphere.

Air at 14.7 pounds per square inch at sea level is equal to zero vacuum on a common dial vacuum gauge. When we have completely eliminated this atmospheric pressure (air), the dial vacuum gauge will read 30 inches at sea level. This relationship shows us that each pound of reduced atmospheric pressure (air) equals approximately 2 inches on the dial vacuum gauge. Therefore, 15 inches on the dial vacuum gauge represents approximately 7.5 pounds of air of 1/2 of 1 atmosphere. We have prepared the following table for simple understanding of the presence of the remaining air indicated by the dial vacuum gauge on a vacuumized chamber.

Vacuum Gauge Reading (Mercury)	*Atmospheric Pressure Remaining*
0 inches	14.7 lbs.
15 "	7.35 "
18 "	5.9 "
20 "	4.9 "
23 "	3.4 "
25 "	2.5 "
26 "	1.9 "
30 "	0 "

Now it is easy to understand that at 20 inches of vacuum you have more than 2½ times the amount of air present than at 26 inches of vacuum. It is apparent from the above table that unless a relatively high vacuum is produced and maintained, considerable air remains and we are therefore defeating our purpose in vacuumizing.

To complete this understanding we must comprehend what happens to air under vacuum when the dough is fed into the vacuum cycle. Air has been entrapped in the dough. Removal of this air is accomplished by the expansion of this air in the vacuum. One cubic foot of air entering the vacuumized chamber will expand two times its own volume under 15 inches of vacuum; three times its own volume under 20 inches of vacuum; and seven and one half times its own volume under 26 inches of vacuum. Therefore, you can see that any entrapped air in the dough is more easily removed at the higher working vacuum. At 26 inches of vacuum, the removal of this air at this high expansion rate is instantaneous.

An added advantage of our vacuum system is having this continuous high vacuum present on the small bulk quantities of dough which is being fed by our rotary feeder and allows the air to expand immediately and be carried off in the most direct manner. By other methods, there is always the possibility of the product being extruded prior to a thorough deaeration.

The benefits of a high vacuum system, as we have already explained, can only be accomplished with a tight system. In order to eliminate air leaks that can occur in a vacuumized chamber that is bolted together, we have cast, as a unit, our small vacuumized chamber in aluminum. The casting of this chamber guarantees an airtight unit for most of its internal contour. On top we have a vacuum tight plexiglass cover to allow a full view to the operator of the agitating, vacuumizing and feeding of the dough to the extrusion screw. The rotary feeder shaft and the agitating shaft of the vacuumized chamber have vacuum tight seals. Recessed in the extrusion housing is a vacuum tight seal holding on the hub of the extrusion screw. The vacuumized chamber and the extrusion housing are fitted together by a machined fit and bolted together with many bolts to assure a vacuum tight seal.

Hand in hand with a tight system, we require a vacuum pump with sufficient capacity and efficiency at the working vacuum. Our extensive experiments have proven to us that the Beach Russ pump gives us the best results from a practical and economical standpoint. We noticed that to operate above 25 inches and to still deaerate that we needed an oil seal rotary vacuum pump to attain the working vacuum of 26 inches at which we are operating. To get this 26 inches of vacuum, it is definitely necessary to have a tight system and a good pump.

No one will doubt that the air is the thief which has been robbing the macaroni products of their good inherent characteristics which are so desirable to have in their entirety. This air which is now entrapped in the dough and entrapped by the pickup motion of the extrusion screw is the culprit which causes the damage. This air compressed and heated by the pressure created by the extrusion screw causes oxidation which spoils the natural color of durum wheat. This same compressed air explodes out of the macaroni immediately upon leaving the die, giving it a rough exterior and a weakened structure.

Vacuumed macaroni, being stronger structurally because we have eliminated the larger air bubbles now visible under a microscope, is a more dense and compact product which is easier to dry satisfactorily. The drying time has been cut approximately 10% to 15%.

Vacuum has also increased the productivity of the continuous press by approximately 10%.

This system working at High Vacuum performs with the automatic features that the operator has been accustomed to for many years. The only moving part is the rotary self-sealing feeder which is coordinated automatically with the long mixer and thus needs no adjustments.

The flour and water adjustments remain the same. What was our small mixer is now the vacuum chamber with a plexiglass cover on top and a vacuum and gauge connection on the side.

Therefore, the transition from a non-vacuum continuous press to a vacuum operation does not effect the operator. This system is simplicity personified.

We must now conclude that in order to get the best possible macaroni, we need the highest practical working vacuum to obtain:

INCREASED PRODUCTION
BETTER DRYING CONDITIONS
A SMOOTHER PRODUCT
A STRONGER PRODUCT STRUCTURALLY
A BETTER LOOKING PRODUCT
A BETTER COOKING PRODUCT
A BETTER EATING PRODUCT

Our experiments have demonstrated that with every increase in vacuum we noticed an improvement in the product. Therefore, it is common sense, "THE HIGHER THE VACUUM THE BETTER THE MACARONI".

Roche Uses Cross-Country Phone During Sales Meetings

A coast to coast telephone network was the feature climaxing the sales meeting and banquet held May 3rd to 7th for sales representatives of the Hoffman-La Roche Vitamin Division at the Skytop Club, Skytop, Pennsylvania.

W. Frank Alexander the Vitamin Division sales representative in San Francisco, who covers California, Oregon and Washington, won the President's Top Ten and Barell Awards for outstanding sales achievement in 1953. But because of an illness which confined him to his home, he was unable to take part in the award ceremonies at Skytop. Instead, Mr. P. J. Cardinal, Vice President in charge of the Vitamin Division, arranged a telephone hook-up between Skytop and Mr. Alexander's home in San Rafael, California. Present were Mr. Alexander's wife, mother and father. Mr. John Tiedemann, who had been deputized by Mr. L. D. Barney, President of Hoffmann-La-Roche, presented the awards.

Also participating in the multiple hook-up from the Skytop meeting were the offices of L. H. Butcher Company, Roche Vitamin Division sales distributors on the West Coast, at La Angeles, San Francisco, Seattle, and Portland.

The ceremones and conversations were also carried to Mr. Cardinal's home in Montclair, N. J. where the Vitamin Division office staff and executives' wives were gathered to hear the proceedings.

After the awards were presented to Mr. Alexander, President Barney made Mr. Cardinal an honorary member of the President's Top Ten Club in recognition of his distinguished leadership and sales achievement. Mr. Cardinal, who was appointed Vice President in charge of the Vitamin Division in 1918, will complete 30 years of service with Roche in July.

During the sales meeting the complete executive, administrative, and technical staff of the Vitamin Division conducted an accelerated training program and analyzed new developments in the use of vitamins in drug preparations and in restoration and fortification of processed foods.

EXECUTIVES AND SALES REPRESENTATIVES of the Hoffmann-La Roche Vitamin Division at their annual meeting, May 3-7, at Skytop, Penna.

Fuller Offers New Bulletin On Pneumatic Flour Handling

The Fuller Co., Catasauqua, Pa., offers a new 16-page, two-color bulletin covering applications of the company's Airveyor System in the pneumatic handling of flour.

Entitled "Flow Your Flour", the bulletin explains and illustrates how the Airveyor System pneumatically conveys flour from carriers to storage, and from storage to processing. Included is information on how the system eliminates bagging costs and cuts labor costs while providing sanitary, dust-free handling.

The bulletin describes and illustrates 5 typical installations—the Enrich Baking Co., Minneapolis; the Canada Bread Co., Toronto; American Stores, Philadelphia; V. LaRosa & Sons Inc., Danielson, Conn; and the National Tea Co., Milwaukee. Illustrations include 26 pictures and 5 schematic drawings.

Also given in the bulletin is information on the Fuller-Gramm truck especially designed for hauling flour in bulk. The truck is engineered for quick loading and for unloading by the Airveyor system.

To obtain copies of this Bulletin—No. AF-100—write to Fuller Co., Catasauqua. Pa.

Uneasy Decimal

"The decimal point leads a restless, uneasy life in the Federal Government. Those groups of three ciphers which are separated by commas are moving steadily to the left."—Herbert Hoover.

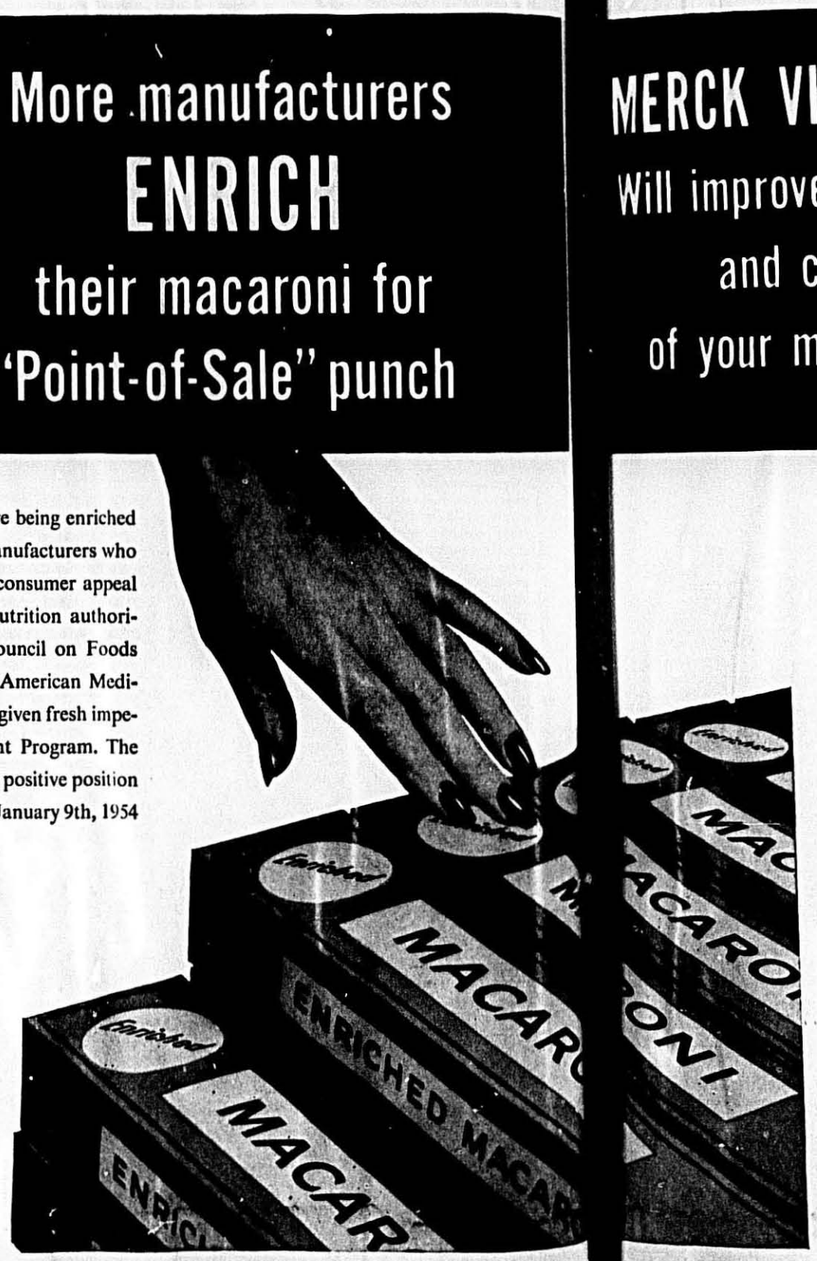
Bulk Flour —

(Continued from page 30)

and for conveying flour in bulk, both pneumatically and by other means, are well proved by extended use. Many macaroni manufacturers are considering seriously going into bulk handling. We are very enthusiastic about the possibilities of bulk handling because of the saving that can be realized by our clients who are able to put the systems into their plants. They can save space, their plants will be more sanitary, and, most important of all, they can realize substantial savings in dollars if systems are properly engineered and they do not cost so much that depreciation offsets the savings.

More manufacturers ENRICH their macaroni for "Point-of-Sale" punch

Macaroni products are being enriched by more and more manufacturers who recognize the potent consumer appeal of enriched foods. Nutrition authorities, including the Council on Foods and Nutrition of the American Medical Association, have given fresh impetus to the Enrichment Program. The Council reaffirmed its positive position on enrichment in the January 9th, 1954 issue of the *J.A.M.A.*



MERCK VITAMIN PRODUCTS

Will improve the nutritional value and consumer appeal of your macaroni and noodles

Make sure *your* macaroni products are enriched so that you, too, may enjoy the dollars-and-cents benefits of this increased interest in enrichment.

FOR BATCH-TYPE OPERATIONS — MERCK ENRICHMENT WAFERS: dissolve quickly; promote uniform enrichment because they resist chipping and dusting; disperse uniformly as the batch is mixed.

FOR CONTINUOUS PRODUCTION — MERCK ENRICHMENT MIXTURES (32P and 12P): can be distributed uniformly; feed readily and flow easily in the usual mechanical equipment.

MERCK VITAMIN PRODUCTS FOR ENRICHMENT OF MACARONI

Research and Production for the Nation's Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

Word from Ben Jacobs

Benjamin R. Jacobs, Director of Research Emeritus of the National Macaroni Manufacturers Association, writes from Paris in mid-May: "After spending about 3 weeks in Paris, we are about ready to go to Spain through Bordeaux and San Sebastian.

"As soon as we arrived in Paris I got in touch with our good friend Jacques Audigier, whom many of the macaroni men know as he has attended several of our conventions. Mr. Audigier invited me to go to Algiers with him to attend the opening of the new research laboratory that the durum millers and macaroni manufacturers of Africa are starting, so we went by plane to spend 5 days in North Africa.

"We crossed the Mediterranean by moonlight and landed at 11 p.m. in Algiers. It was my first experience in flying and it was also a most unexpected experience.

"The laboratory is a 3-story building that has just been put up and is well equipped for the task that it has to do. After the ceremonies dedicating the la-

BENJAMIN R. JACOBS

boratory, we went to Bausaada on the edge of the desert and spent a couple of days. Here we enjoyed an Arabian spread consisting of lamb done to a crisp on a spit and caus-caus (a coarse grain semolina cooked in steam) and other Arabian dishes, all eaten with the fingers. One tears off chunks of the barbecued meat and then you tear it some more with your teeth.

"Since my return to France from Algiers I have seen a number of macaroni plants, many with up to date equipment. I have also visited the French school for millers, bakers and macaroni manufacturers, and it is well provided with modern appointments and well-trained personnel. It would be a wonderful thing if we had a similar institution in the United States.

"I will write again from Italy.

—Benjamin R. Jacobs

NATIONAL MACARONI WEEK
October 21-30, 1954

VACUUM AND NON-VACUUM PRODUCTS COMPARED

THE DEFRANCISCI MACHINE CORPORATION had the Jacobs-Winston Laboratories analyze samples of spaghetti made with the same ingredients, one under a vacuum press and the other without the use of vacuum. Examination was made in late April and the report from the Jacobs-Winston Laboratories follows:

We wish to report the results of our examination and investigation of two samples of spaghetti recently received from you. One sample of spaghetti, sample #1, our laboratory #69287, was processed under standard conditions, without the use of any vacuum. Your other sample #2, our laboratory #69288, was processed under standard conditions, using the vacuum system.

These two samples of spaghetti were manufactured from the same farinaceous ingredients. Our analysis is as follows:

TABLE #1

Sample	*Moisture Percent*	*Ash*
1 non-vacuum	11.2	0.55
2 vacuum	11.4	0.56

The question of mechanical strength of the macaroni product has always been regarded as one of the criteria of its quality. It was therefore deemed advisable to compare the breaking strength of these two products. In our laboratory we determine the strength of a product by its resistance to breaking. The average breaking strength of the 10 strands of spaghetti is taken as the breaking strength of the product. Individual breaking tests seldom vary more than 10% in the same sample. The results of this test on two samples of spaghetti received from you were as follows:

TABLE #2

Breakage resistance of non-vacuumed and vacuumed spaghetti

Sample	*Breaking strength in grams Average of ten samples*
1 non-vacuum	48.3
2 vacuum	57.6

The results of this test show that the vacuumed spaghetti offers a greater resistance to breakage than the non-vacuumed spaghetti by 20%.

The two products received from you were also evaluated for color scoring, since color has always been considered an important criterion in the quality of macaroni products. The visual examination of these two samples showed a distinct difference in the amount of yellow; the vacuumed products showed a deeper yellow than the non-vacuumed product. Color tests were determined both by chemical means to measure the carotenoid pigments and also visual tests to determine the reflected light, using a disk colorimeter. The results are as follows:

TABLE #3

Sample	*Yellow Percent*	*Brown Percent*	*Color PPM**
1 non-vacuum	13	16	2.18
2 vacuum	18	16	2.81

*Carotenoid pigments in terms of carotene in parts per million.

The results of this color test show that the vacuum system reduces the amount of oxidation of color during processing, and thereby yields a finished product with a better retention of color. It is interesting to note that the vacuumed sype of product produces spaghetti with 29% more carotenoid pigment.

Another experiment was undertaken to determine the changes taking place during the cooking process. It was thought advisable to determine the percentage increase in weight and volume after cooking, and also the dissolved solids in the cooked water. Preliminary experiments were made to ascertain the cooking time of each sample. It was determined by different analysts that the cooking time for your non-vacuumed spaghetti is 14 minutes.

These products were cooked in accordance with the following standard procedure: Eight ounces of spaghetti were placed into two quarts of boiling water, containing 1% salt. The spaghetti was boiled briskly for the stipulated amount of time, counting from the time the macaroni is dropped into the water. The spaghetti was then drained through a colander. Our experiments showed that by maintaining the cooking time for the non-vacuumed spaghetti to 12 minutes, and the vacuumed spaghetti to 14 minutes, the resulting product had approximately the same degree of tenderness. The cooked products were examined very carefully and the following determinations were made:

1—Percentage weight increase
2—Percentage volume increase
3—Percentage of residue

The results are as follows:

TABLE #4

Volume and weight increases and percent residue (Average 3 cooking tests)

Sample	*Increase in volume percent*	*Increase in weight percent*	*Residue* Percent*
1 non-vacuum	203.3	168.7	6.14
2 vacuum	211.4	170.9	5.58

*Dissolved solids in cooked water indicating the degree of disintegration.

The results of this cooking test shows that the vacuum type of spaghetti reduced by 10% the amount of residue and increased slightly the volume and weight of the cooked spaghetti.

NUTRITION—WHAT WE KNOW AND WHAT WE NEED TO KNOW

By EDITH S. LINSLEY, G. G. Hoskins Company

EDITH S. LINSLEY

OUR sales activity has always been directed towards the consumer, but you, as production managers, perhaps need to sit back and take a look at the product you manufacture and see its ultimate use—the eating of it. For, if it wasn't eaten, you wouldn't have a job.

We would think a housewife was silly if she bought foods of only one type; that is, if she served only rice, potatoes, macaroni products or bread, or if she gave her family a diet of only fruit.

Balancing the diet, like balancing the budget, is becoming a common expression in our time. We have experienced in the past few years an array of food faddists, especially working to lure people who wanted a reducing diet—bananas and skim milk, yogurt and black strap, dark bread, etc. Fundamentally, as nutritionists have always told us, a balanced diet—simply containing a variety of foods which supply all the nutrients—is needed for good health. A well-balanced diet is more economical because the foods are better utilized and less is wasted by the body.

In the present state of our knowledge, there are 50 or 60 known nutrients and there are undoubtedly more to be discovered. It would be almost impossible to balance the diet down to the very last milligram, but for practical purposes, and most housewives are practical, it *is* possible to balance the diet by selecting a *combination* of foods that provides all of the dietary essentials known.

Six main food groups make up the balanced diet—carbohydrates, fats, proteins, vitamins, minerals and water. The first three of these, carbohydrates, fats and proteins contribute the calories (fuel or energy) needed. Carbohydrates are the cheapest source of energy. The primary function of proteins is the building of body-tissue and their repair and maintenance. The diet *must* contain enough carbohydrates and fats to furnish adequate calories so the protein and its amino acids can do their vital work. Otherwise, if there is an insufficiency or imbalance of the other food groups, the protein will be burned up for fuel.

During the past 10 years, nutritional education has proceeded to the point where not only dietitians and doctors are educated, but home economics education is being given to most of our girls and, in some cases, to our boys so more and more the people who will be the homemakers and parents of tomorrow will have a good background. This does not mean that we do not have alert and nutritionally conscious homemakers today who read the material food editors supply. The Department of Agriculture has a Handbook #8 which gives a good background of nutritional data. This is available by writing the U. S. Department of Agriculture. They have also made available in recent years a Chart showing 7 Basic Foods. We have used this material from time to time as well as the Heinz book on "Nutritional Data." With some of the material we agree and with some we disagree. We have written both sources asking pertinent questions and in both cases they have admitted that their data was meager and have asked us to present information to them to substantiate our belief. This we either have done or are doing.

Now, we, of course, want to see where our macaroni and noodle products fit into this picture. Here is what we find from the best sources:

1 lb spaghetti or macaroni (uncooked) has between 1630 and 1712 calories depending on the moisture content. It has from 11 to 13% protein. It is from 71 to 76% carbohydrate.

1 lb. egg noodles (uncooked) has between 1730 and 1716 calories. It has from 11 to 14% protein and from 70 to 73% carbohydrates.

Macaroni or spaghetti when cooked weigh approximately 2.6 times their weight when dry. Noodles when cooked weigh approximately 2.8 times their weight when dry. We have made numerous tests to find the averages on this.

There seems to be a well-grounded belief that all macaroni and noodle products are fattening; that they are too much carbohydrates. The cooking process changes the moisture content of the product so when it is ready to eat, your carbohydrate has become about 30% of the weight. Then you must take into consideration what the housewife puts with these products in preparing them:

I have analyzed two easily and commonly prepared dishes as follows:

Macaroni and Cheese

8 oz. macaroni	855 calories
1 T. butter	100 calories
2 T. flour	50 calories
2 cups milk	330 calories
½ lb. cheese	900 calories
½ cup cereal flakes	32 calories
	*2277 calories

*Divided by 1 in family equals 569 calories each

Noodle Ring with Filling

6 oz. noodles	650 calories
2 T. butter	200 calories
1 cup cheese	450 calories
3 eggs	231 calories
1 cup milk	165 calories
2 pimentos	20 calories
2 T. flour	50 calories
1 cup bread crumbs	340 calories
	2106 calories

Filling

8 hard-cooked eggs or	
1 cup tuna fish or	
1 cup chicken	630 calories
2 cups white sauce	700 calories
	*3436 calories

*Divided by 4 in family equals 859 calories

Now with either of these as the main dish for a meal, the housewife could serve a salad of

Head lettuce	40 calories
1 dozen radishes	15 calories
6 small green onions	20 calories
3 tomatoes	90 calories
Vinegar dressing	30 calories
	*195 calories

*Divided by 1 in family equals 19 calories

and a bowl of fresh fruit (apples,

peaches, bananas, grapes) with none of these running over 125 each and she has a full calorie count of 2972 in the case of Macaroni and Cheese or 743 calories per person or 4131 in case of the Noodle Ring or 1033 per person. Keeping in mind a recommended daily allowance for adults averaging about 3000; for children up to 12 years from 1600 to 2500, depending on ages, doesn't it seem reasonable to expect to serve one meal a day with as many or more calories than this?

Even a super-deluxe Spaghetti Sauce on Spaghetti came out to 4500 calories for the sauce and 1700 calories for a a pound of spaghetti and we can have a party of 8 people to eat that much. Believe me, if you make it good, they'll eat spaghetti and won't want anything else.

I asked a young mother the other day how often she served macaroni products. She said, "At least once a week." When I asked her why she replied, "My family loves them. I can make a good dish with little meat. I think they are good for them and I have to fill them up."

Now, let us for a moment look at the typical American probably best-loved dinner:

Dinner for Four

1 lb Sirloin steak	1173 calories
3 cups whipped potatoes	720 calories
Buttered peas	490 calories
Green salad	200 calories
Rolls and Butter (1 each)	600 calories
Apple pie	1320 caloris
	*4503 calories

*Divided by 4 equals 1126 calories each

We must learn the best way to advertise to the homemakers that they can use your products in endless ways —they can make them with sauces using milk or they can use Half & Half; they can use a little butter or lots of butter; they can use a small amount of cheese or gobs of cheese, depending on the amount of food value they want to add, but whatever they add, they are adding good basic foods to our already good basic food.

The lowly potato gives the same story:

1# potatoes peeled and boiled
378 calories

1# potatoes—Mashed with Milk and Butter
559 calories

1# potatoes Hash Browned
1091 calories

1# potatoes French Fried
1781 calories

It's just a matter of how you prepare them as to the calories you have.

The macaroni industry must stop taking a defensive attitude; your products have no more calories than lots of other foods. You have a good product made from a good basic food—wheat. It is a carbohydrate and we are proud that it is going to *give energy* to our American people.

JULY IS PICNIC MONTH

Let's Have a Picnic!

The time for eating as many of your meals as possible outdoors is here! And there are many places in the Hometown area, aside from your own back yard, where you will find the best possible facilities for dining out. Parks, forest preserves, roadside stands, beaches—all these and more are available to the picnicker in a few miles of your own home. Easy to get to, with ready-made fireplaces, certified drinking water and playground facilities, the Hometown region provides all that the picnicker can ask. For family groups, for a busload of youngsters, for churches and clubs, the facilities are adequate for anyone's particular needs. Take advantage of all that is offered; come out of doors and join us in a picnic, now and many times during July—National Picnic Month!

Approximately 300 newspapers have joined the Picnic Month bandwagon by building special picnic sections. Grocers are reading an excellent picnic article in Super Market Merchandising, after which they receive a kit of picnic promotion material including posters, one and two color matted ads, and eight ad drop-ins. The merchandising departments of Look, Colliers, McCall's and American Weekly also are providing grocers with fine picnic materials. Super Market Merchandising now is preparing a picnic mailing to 500 food brokers. This points out the advantages of talking up the picnic idea among their own salesmen and grocery accounts.

Picnics call for plenty of hearty fare and there's nothing that satisfies healthy outdoor appetites more than a flavorful macaroni salad. Busy homemakers can save valuable last-minute preparations by making the salad the night before and leaving it to chill in the refrigerator. Use a handy covered container for the chilled salad, pack it into a picnic cooler or portable ice-box, and it will keep deliciously cool until meal-time rolls around. You'll find Summer meal-planning simple if you include an appetizing macaroni salad in your picnic and outdoor party menus.

Macaroni Norwegian Salad
(Makes 4-6 servings)

1 tablespoon salt
3 quarts boiling water
8 ounces elbow macaroni (2 cups)
2 cups sliced cucumber
1 cup sliced onions
½ cup vinegar
3 tablespoons water
¼ cup sugar
Salt and pepper to taste
1 cup sour cream
1 3-¾-ounce can sardines, drained

Add 1 tablespoon salt to rapidly boiling water. Gradually add macaroni so that water continues to boil. Cook uncovered, stirring occasionally, until tender. Drain in colander. Rinse with cold water and drain again. Chill.

Combine cucumber, onions, vinegar, water, sugar and salt and pepper to taste, set aside for 1 hour. Drain vinegar mixture from cucumber and onions; add cooked macaroni and remaining ingredients. Toss lightly but thoroughly and chill well before serving.

How Times Have Changed

In a recent issue Harper's Magazine reprinted the following excerpt from The Lady's Realm of February 1906:

Angularity of form is invariably ugly, and is best remedied by very careful dieting. Fattening foods of all kinds should be eaten. Farinaceous foods, rice and tapioca, taken in the form of milk puddings, are excellent. Potatoes, butter and beans should be eaten freely. Sweets and pastry are useful in encouraging the development of adipose tissue. Cream also forms a delicious food with fattening properities.

Picnics Began 'Way Back

Picnics may seem strictly American, but actually they aren't. In a sense, the first meal man ever ate was a picnic—that is because of necessity. He had not yet learned to seek shelter in a cave or tent and consequently ate his meals outdoors against a background of natural scenery. And, because he still lived in the wilderness, it was usually no picnic.

Since that time, picnics have been going on through the years, but just what they were called then no one seems to know. However, the word picnic is derived from the French word "piquer" meaning to pick. Somewhere along the line "nic" was added to give us the present day word of picnic. But, no matter what the spelling or the name, picnics have become the favorite outdoor pastime of millions of people throughout the world. And, the ancient Greek poet, Homer, often sang its praises.

Were Social Gatherings

Originally, a picnic was a fashionable social gathering in which each person attending contributed a variety of foods to a common table. The people would then walk around the table picking or choosing the foods that were most desirable to them. This form of eating became so popular that they had to be held out in the open because no one building could hold so many people.

History has indicated that the early rugged outdoors type of picnic developed into quite a formal affair in England during the mid-nineteenth century. Many picnic societies were formed and the fashionable members were not only treated to a buffet style meal but were amused with theatrical and social entertainment.

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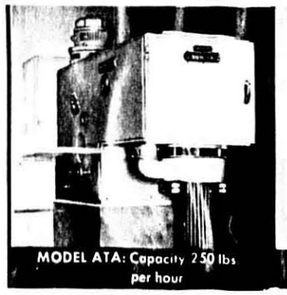
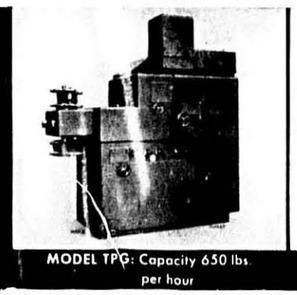
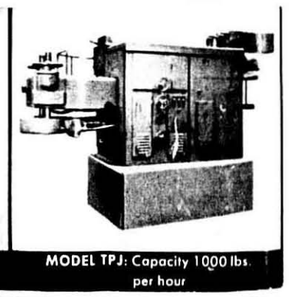


MODEL ATA: Capacity 250 lbs. per hour



MODEL TPG: Capacity 650 lbs. per hour



MODEL TPJ: Capacity 1000 lbs. per hour

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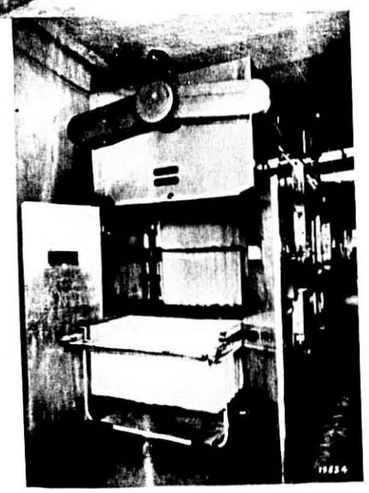

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"SOME LIKE IT HOT—SOME LIKE IT COLD"

But Everyone Likes Tuna and Macaroni Products for Summer Eating, June 15-July 31

The following copy suggestions and kitchen-tested recipes have been sent by Theodore R. Sills and Company to food page editors all over the country for the National Macaroni Institute

Add a Cool Note to Your Table with Refreshing Tuna and Macaroni Salads

Are you stumped by warm-weather menu planning? Why not make things easier for yourself this summer by using canned tuna from California in combination with macaroni, spaghetti or egg noodles in cooling salads, appetizing casseroles and simple top-of-the-range dishes?

With the tuna-macaroni team there's no storage problem, no waste, no peeling and no problem of perishability. You can turn out all sorts of delicious-tasting treats with the least possible effort on your part.

For instance, you'll bask in praise when you serve these Islander Tuna Macaroni Salads. Glamorous in looks, they're every bit as delightful to eat as they are appealing to the eye.

From all appearances these luscious salads would seem to involve a great deal of preparation but the truth of the matter is they're easily assembled from a minimum of ingredients — canned tuna, elbow macaroni, fresh pineapple cubes, chopped green pepper and mayonnaise. Serve in scooped-out pineapple shells to give a party touch and garnish with maraschino cherries.

Islander Tuna Macaroni Salad
(Makes 4 servings)

1 tablespoon salt
3 quarts boiling water
8 ounces elbow macaroni (2 cups)
2 small fresh pineapples
1 7-ounce can solid-pack tuna, drained
1 large green pepper, coarsely chopped
½ cup mayonnaise
Salt and pepper to taste
Maraschino cherries

Add 1 tablespoon salt to rapidly boiling water. Gradually add macaroni so that water continues to boil. Cook uncovered, stirring occasionally, until tender. Drain in colander. Rinse with cold water and drain again. Chill.

Cut pineapples in half lengthwise; scoop out pineapple meat, leaving shells ¼- to ½-inch thick. Dice pineapple meat. Break tuna into pieces with a fork. Combine tuna, pineapple, cooked macaroni, green pepper, mayonnaise and salt and pepper to taste. Mix well and fill pineapple shells with tuna-macaroni mixture. Chill in refrigerator. Garnish with maraschino cherries and serve.

Serve Tuna Spaghetti Casserole for One Hot Dish at Summer Meals

The knack of serving food in a variety of ways is laudable, especially during the summer when "Some Like It Hot. . . . Some Like It Cold." The Tuna Research Foundation and the National Macaroni Institute are co-sponsors of a promotion, June 15 - July 31, that will aid homemakers in their search for main dishes that will appeal to appetites jaded by the heat.

Canned tuna from California and macaroni, spaghetti and egg noodles require a minimum of preparation to produce delightful dishes.

For coolish evenings when a hot main dish seems advisable we suggest Tuna Spaghetti Casserole, Provincial-Style. Canned onion soup imparts a distinctive flavor to the tuna-spaghetti team. Mugs of chilled beer and a tossed salad are perfect accompaniments.

Just the ticket for those sweltering nights when a cold meal is dictated is the Macaroni Tuna Macedoine. A substantial main-dish salad, it will satisfy the heartiest appetites.

Tuna Spaghetti Casserole, Provincial-Style
(Makes 4-6 servings)

1 tablespoon salt
3 quarts boiling water
8 ounces spaghetti
1 10½-ounce can condensed onion soup
½ cup milk
2 tablespoons all-purpose flour
¾ cup water
1 cup grated processed Cheddar cheese (¼ pound cheese)
3 hard-cooked eggs, diced
1 6½-ounce can chunk-style tuna, drained
Green pepper rings
Hard-cooked egg slices

Add 1 tablespoon salt to rapidly boiling water. Gradually add spaghetti so that water continues to boil. Cook uncovered, stirring occasionally, until tender. Drain in colander.

Combine onion soup and milk; brings to boil over medium heat. Combine flour and ¾ cup water; mix until blended and gradually add to onion-soup mixture. Cook over low heat until thickened, stirring constantly. Combine soup mixture, spaghetti, cheese, hard-cooked eggs and tuna; mix well. Turn into greased 1½-quart casserole. Garnish with green pepper rings and hard-cooked egg slices. Bake in moderate oven (350°) 30 minutes. Serve piping hot.

Try These Unusually Good Recipes for Tuna and Macaroni Products

Hot or cold, you can't go wrong in starring tuna and macaroni products on your summer menus, June 15-July 31. Here are two new ways to serve them:

Gold Coast Tuna Shell Salad is a flavorful mixture of tuna, macaroni shells, diced avocado and grapeful sections. Surprise ingredient is creamed cottage cheese which doubles as a dressing. If hot casserole is more to your taste, team tuna and egg noodles with succotash in a main dish that's a cinch to prepare.

Gold Coast Tuna Shell Salad
(Makes 6 servings)

1 tablespoon salt
3 quarts boiling water
8 ounces shell macaroni (about 3½ cups)
2½ cups grapefruit sections
½ cup diced cucumber
1 medium-sized avocado, peeled and diced
2 7-ounce cans solid-pack tuna, drained
1½ cups creamed cottage cheese

Add 1 tablespoon salt to rapidly boiling water. Gradually add macaroni so that water continues to boil. Cook uncovered, stirring occasionally, until tender. Drain in colander. Rinse with cold water and drain again. Chill.

Combine chilled macaroni with remaining ingredients; toss lightly. Chill and serve on crisp salad greens.

Tuna Noodle Succotash Casserole
(Makes 4-6 servings)

2 10-ounce packages frozen succotash
5 cups milk
¼ cup butter or margarine
8 ounces wide egg noodles (about 4 cups)
1 7-ounce can solid-pack tuna, drained
Salt and freshly ground pepper to taste

Combine succotash, milk and butter or margarine; heat to boiling point and cook 5 minutes. Gradually add noodles so that mixture continues to boil. Cook uncovered, stirring occasionally, until noodles are tender. Break tuna into pieces with a fork and add to noodle mixture; add salt and pepper to taste. Turn mixture into greased 2-quart casserole and bake in moderate oven (325°) 30 minutes.

PRODUCING NUMBER FIVE COLOR YOLKS FOR EGG NOODLES

By RICHARD H. FORSYTHE, Henningsen, Inc.

Presented at Plant Operations Forum VI

I WOULD like to first of all discuss a few of the factors which are definitely known to influence the color of yolk. We know that the primary factor affecting color is the feed that goes to the chicken. Green feeds such as alfalfa, green grass, rye, yellow corn, and other materials containing high concentrations of carotenoid pigments give the dark color of yolks desirable to pou people. Many related ractors influence the kind of feed that actually is consumed. For example: the amount of grass available to the chickens is by far the largest inthe spring months. Hence, season becomes a factor. We also know tha the amount of green grass is directly related to the area in which the chickens are grown. Hence, area becomes a factor. It has been definitely established by research that feed and these related factors are the only things that effec yolk color to any significant extent.

I have prepared three charts based upon actual color determinations to show you how these factors effect the color in the breaking operation. The first chart, which I have borrowed from a Government publication, shows the effect of mash feeding as opposed to green grass and other high-color feeds. From an examination of this chart it is readily apparent that chickens fed on mash, which normally contains low quantities of carotenoid pigments, produce light color egg yolks especially when confined to pens and their access to green grass is limited.

In the second chart I have attempted to show you the change in color encountered during seasons. This chart is for eggs produced in Southern Missouri during 1953 and shows a definite increase in color up through the middle of May. One would normally expect that the green feed would be available at least two or three months later than this and hence the egg yolks might remain darker. You will recall, however, that the southern part of the Central States has been plagued with a serious drought for the past two years which is definitely reflected here by the lack of green grass.

In the third chart I have shown the color obtained so far this year in two areas which are known to differ widely in their yolk color. You will note that in the Nebraska area, which is also true of Minnesota, South Dakota, and most of Iowa, that our color has been averaging a 2.0 since befort the first of February. There is very little green grass in that area even up to the present time. In the Kentucky area the color has been much darker but appears to be leveling off this year at around 4.0 to 4.5.

I hope these charts will give you a factual picture of what the egg breaker runs into when he is trying to select eggs for darker color.

You are perhaps wondering just how the egg breaker does go about selecting eggs that do have dark color. First of all several facts should be considered. The most important of these is he must buy the eggs that are available to him at the lowest prices possible so that he can reflect to you a reasonable cost of your egg yolk ingredients. The egg breaking plant operator lots his eggs as they are received in his warehouse and takes samples from these eggs to determine average color of each lot. After buying eggs in one area for some time, it becomes fairly easy to know what kind of color you can expect at any given time. These lots are then broken as required to meet color specifications.

A second procedure which is sometimes resorted to is the actual selection of eggs for dark color as they are being broken out. Since the vast majority of eggs are broken by hand this becomes a costly process which, of course, only adds to your problems.

To adequately maintain color control a laboratory must be maintained in the plant which can run these colors on the spot. In all of the quality control laboratories under our jurisdiction we maintain on the spot determination of color. In our own organization these results are forwarded immediately to our Central Laboratories, thereby permitting us to select color from several different areas as required by our customers.

At this point I would like to mention something else that is tied in with color. It has been shown time and time again that chickens allowed to run at will on the farms produce eggs of poorer quality from a bacteriological and organoleptic standtpoint than when confined to pens. I have shown you in the preceding charts that egg color is poorest when the birds are confined to pens. Hence, we are forced to strike a happy medium by obtaining the best egg quality and the best color that we can.

I have heard it said several times during the past five years that the color of egg yolk is getting lighter. I am sure you have heard and experienced this yourself. That this is a fact has been definitely established by keeping adequate quality control records over several years. A logical question is, "Why is this happening, and what can be done to stop it?" Practices in the breaking room *have not* contributed to this lightening of color. Actually, improved quality control technics have been the only factor that has slowed down this trend as much as it has been. You undoubtedly know that egg breakers take a relatively small portion of the total eggs produced in this country. Eggs to be marketed and consumed as shell eggs which contain light yolk color are in the greatest demand. With the present egg grading technics it is virtually impossible to give an egg with a number five color yolk a Grade "A" classification. In candling practices, the more distinct the outline of the yolk the lower the grade and hence the dark yolks are seldom placed in the higher grades.

The demand for shell eggs of light yolk color being what it is, the extension people in the various colleges throughout the Midwest have actively worked to improve flock management practices so that a light yolk will be obtained. Better profits result for the farmer who keeps his birds confined and feeds high quality mash. These practices result in an egg that is not satisfactory so far as contributing to the color of egg noodles. I have many personal friends among the extension workers and I know that their activities are not going to be lessened in the future but rather will be extended and the present trend toward lighter colors will become an ever more serious problem than it is now. You may ask, "Can this trend be stopped?" The first part of my answer is, "Probably not." With over 90% of the eggs produced in this country being produced for light color, the minor 10% I am afraid is just going to follow along.

I would like to ask, "Actually how much does egg color mean to you and how much are you willing to pay for it?" I know from a recent survey that practically all the noodle manufacturers included egg color specifications in their purchasing requirements. Most firms indicated they rejected eggs that would not meet their color specifications.

As time goes on a greater premium is going to be required to obtain this color. Many other uses of egg products have already adjusted their formulas and set their sights on lower egg color. In many instances it has been found that consumer acceptance was not harmed at all by the light color. Color uniformity has been shown in many cases, for example, prepared mixes, to be of considerable more importance than the deep yellow. The housewife makes her homemade egg noodles with light color yolks.

I would like to suggest that factors other than eggs might be responsible for some of the color of noodles. Is it

not possible that the water content, the pH, the air content, flour color, and especially particle size may play a very important role in the apparent color of noodles? Matz and Larsen in the March issue of "Cereal Chemistry", reported the work they had carried out on the evaluation of Semolina color with Photoelectric reflectometers. They asked several questions in the discussion of their article which I feel are very pertinent to the egg problem. I would like to quote: "In this regard the question might be raised as to the relationship of the color of Semolina to the color of macaroni or spaghetti made with Semolina? Is the importance of particle size to the color of Semolina lost during processing? Is the pigment lost due to enzyme action during macaroni processing relatively constant for different batches of Semolina? What effect do different processing methods have on color of the finished product?"

Is any research being carried out by the Noodle Industry to determine the effect of these other factors on the final color of noodle products? The Egg Industry would welcome the opportunity to participate and cooperate in any efforts that might be suggested.

Finally, we know what it takes to produce a five color yolk. At the present time we do not see any feasible procedures by which this can be accomplished and if the procedures, that we can see, did prove to be workable, I seriously doubt if you would want to pay what it would cost.

The relatively small amount of money spent for research on the factors effecting the color of noodle products and the consumer acceptance of lighter color noodle products might be considerably less than the amount of money it is going to take to buy #5 yolks.

LEE PHILIPS of "Shopping with Miss Lee," popular television program on WBKB-TV, Chicago, talked about macaroni with Secretary Bob Green recently.

More Jobs Through Better Selling

Selling is what makes the money go round, makes the goods move, creates jobs, stimulates investments, makes prosperity.

We've got to step up our sales—to keep our earnings, to keep the economy healthy, to keep employment high. To keep a political climate which will allow your business to thrive.

The importance of selling was stressed at the recent meeting of the Chamber of Commerce of the United States.

Increase Your Sales

Judson Sayre, newly appointed Vice-President of Borg-Warner Corporation made the point which lies at the bottom of good management, profits, sales, and

AUTHOR: Here is a picture of Thomas J. Viviano, Delmonico Foods Company, who wrote the article "Good Plant Morale Is No Accident," on page 28 of the June issue of the Macaroni Journal.

Better Selling —

(Continued from page 50)

resulting high employment.

"Two frogs inadvertently fell in the farmer's can of cream. The farmer placed the lid on the can and started for town. The one frog said, "We will never get out; we are doomed", and with that he turned up his toes and went to the bottom. But not the other frog. He started kicking and kicking and behold when the farmer got to town and he removed the lid, there sat the eager beaver frog on a five-pound piece of butter. He had kicked himself out of his trouble." The point is, when you have a sales problem, do something about it! Go back to the old days when selling was hard and polish off the old tricks. Call your customers, ask if they are satisfied. Ask them if they can suggest friends who may be pro-spective cu-tomers. Run sales contests among your salesmen. There are lots of things that can be done.

George Stearns, President of L. L. Stearns Department Store of William port, Pennsylvania, put it this way for the retail trade. "Far too many retailers today are navigating by the seat of their pants. . . Get the facts about your primary and secondary trade areas and then you can develop an intelligent approach to sound merchandising methods and effective trade promotion efforts . . . All personnel, both selling and non-selling must become sales conscious . . . All employees should treat every customer as an honored guest. . . How many automobile agencies are having difficulty today because the attitudes of people in their service departments discourage patrons from returning?"

Mr. Stearns also emphasized that sales personnel need *continuous* sales training. "Shot-in-the-arm" meetings are fine once in a while with an outside expert, *providing* "the store has a *continuous* sales training program for all personnel. The older employee with considerable seniority needs this training and re-training just the same as the new employee."

How About Advertising?

Of course, what we are leading up to here is advertising, since it is one of the most potent sales tools you can use. When authorities recommend stepping up sales, that means advertising too.

It used to be that management set their advertising budget as a certain percentage of costs, or as a certain percentage of sales. This saved a lot of hard thinking and was convenient in making a decision on a very intangible subject. Nowadays, progressive management recognizes it as simply an expedient method which puts the cart before the horse. Actually advertising is a precision tool that can be used effectively to help sales, even to create them.

The "Task Force" method is now the way to plan advertising. Fundamentally, this means to plan your advertising to accomplish an objective in coordination with your sales and merchandising efforts. You invest money in advertising and sales promotion to get a return in profitable sales. You don't spend it as a percentage of certain other costs simply because of tradition or divine re-

Jule Waber Promoted

Promotion of Jule Waber to manager of the Great Falls, Montana, division of Farmers Union Grain Terminal Association, was announced in St. Paul by M. W. Thatcher, General Manager of the huge grain co-op. Waber has been manager of the Amber Milling Division at Rush City, Minnesota, since 1912.

DON W. KNUTSEN

New General Mills Man in Chicago

Mr. Don W. Knutsen, veteran General Mills salesman, has been transferred from Fresno, California to Chicago.

Don will contact Durum users in the Central States territory and will headquarter in Chicago.

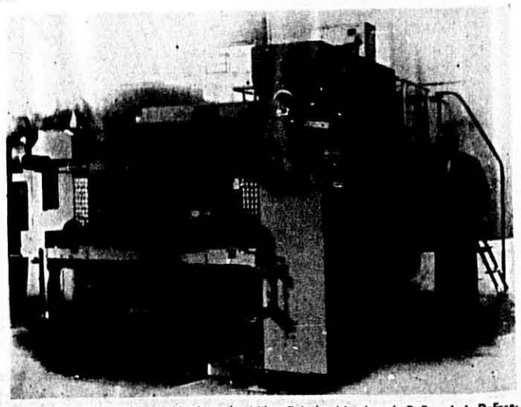
Mr. Knutsen has acquired a broad and varied experience with General Mills in several different territories, servicing both the Macaroni and Baking Industries.

He served in the U. S. Air Forces for 57 months during World War II and was a member of the famous "Flying Tiger" group in China. He left the Air Force with rank of Captain.

Don is a family man—has a charming wife and three fine children.

• • •

"Every dollar we cut from the budget is a dollar less we will have to add to the tax burden."—Rep. John Taber, N.Y.



DEMACO SPREADER exhibited at the Milan Fair by Mr. Joseph DeFrancisci, DeFrancisci Machine Corporation, Brooklyn, and Cav. Paolo Meneghini. Meneghini will build and distribute the Demaco Spreader throughout Europe and South America.

RETROSPECTIONS

by

M. J.

JULY Gleanings and Recollections

35 Years Ago

• Julius H. Barnes, U.S. Wheat Director plans a Government policy of adding periodic premiums to prevailing durum prices to help the natural flow of wheat from farms to processors.

• The U. S. Grain corporation has been set up to handle the gigantic wheat crop. Capital $500,000,000.

• The 1919 wheat crop, greatest of record, is estimate at one billion bushels as against 918,000,000 in 1918.

• President Woodrow Wilson announced a decree for all handlers of wheat products, excepting farmers and small processors.

• A Cincinnati, Ohio investment house has underwritten an issue of $1,000,000 7% preferred stock of the Cleveland Macaroni Co., Cleveland, O.

• Frank S. Bonno, Dallas, Leading Texas macaroni manufacturer spearheads a drive to bring every macaroni and Fideos firm in Texas into the National Association.

25 Years Ago

• The 1929 Convention in Hotel Astor, New York City, June 18-20 broke all previous attendance records. The official registration included 87 executives of 58 macaroni-noodle manufacturing firms from every section of the U.S. and 89 representatives of 41 allied firms, plus two Association officials, a total of 179, exclusive of women and children accompanying.

• The Convention whose theme was "Get Better Acquainted" was presided over by Association President Frank J. Tharinger of Tharinger Macaroni Co., Milwaukee, Wis.

• Among the Convention speakers were: Louis S. Vagnino, Frust Macaroni Co., St. Louis, Mo.; Frank Traficanti, Traficanti Brothers, Chicago, Ill.; Lawrence E. Cuneo, Connellsville Macaroni Co., Connellsville, Pa.; Thomas Roberts, Washburn Crosby Co., Minneapolis, Minn.; Dr. Daniel R. Hodgdon, Home and Food Bureau, Dietetic College, Columbia University, New York City; Mrs. C. H. Goudiss, Editor of The Forecast Magazine, New York and her first assistant, Miss Marion B. King, former medical dietitian, Battle Creek, Mich. Sanitarium; Mrs. Elizabeth Hallam Pohn, N. Y. Food Consultant and Miss Marye Dahnke, Kraft Cheese Co., Chicago

15 Years Ago

• J. H. Diamond, president of Gooch Food Products Co. Lincoln, Nebr. has been installed as president of NMMA.

• Optimism prevailed at the NMMA convention in Park Central Hotel, New York City, June 26-27, 1939, the theme of which was "Progress Through Understanding and Cooperation".

• "MACARONI-NOODLE DAY", June 28, 1929 was officially observed by the management of the "World-Of-Tomorrow" Fair in New York. The conventioners and their families attended in a body and thoroughly enjoyed the special program honoring the Macaroni-Noodle Industry of U.S.A.

• In his report to the Convention, Philip R. Winebrenner of A. C. Krumm & Son, Macaroni Co., Philadelphia, Pa. retiring NMMA president said: "This report will provide little comfort for those who have been over-optimistic or impatient. Our present condition provides a critical test of our capacity to work things out. Similar challenges have been met before, and I'm confident that a solution will again be found."

• A seal for the National Macaroni Institute submitted by NMMA Secretary-treasurer, M. J. Donna, was unanimously approved.

• At the NMMA dinner the evening of June 27, 1939, greetings were extended to Mr. & Mrs. John Amato on their return from their honeymoon. She is the daughter, Josephine, of Mr. & Mrs. C. Surico, president of Clermont Machine Co. Brooklyn, N. Y.

5 Years Ago

• In stressing his oft-repeated suggestion—"1) Use top quality raw materials, 2) best available machinery, packaging and know-how", NMMA President C. L. Norris quoted a successful colored preacher who said—"First I tells 'em, the I tells 'em again, then I tells 'em what I told 'em".

• The 1949 convention theme was: "Better Materials, Better Methods and Better Merchandising for Vetter Business."

• The official enrollment at the 1949 convention in the Edgewater Beach Hotel, June 27-29 totaled 66 manufacturers from 41 firms, 104 representatives of 45 allied companies and three Association officials,—170 officials from 86 firms. Ladies and children were not registered.

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Add These Members

The listing of members in the National Macaroni Manufacturers Association on the back cover of the June issue of the Macaroni Journal should include Bay State Macaroni Company and The Chicago Macaroni Company.

Pillsbury Globe in Los Angeles should be listed as an Association member as well as an Institute member.

• William Franzen of Mapes, N. D., the 1948 durum king prefers the Mindum variety of durum, but Stewart was the leading type shown at the Durum show where he was crowned.

• Miss Virginia Merlino, 19 year old daughter of Mr. & Mrs. Guido P. Merlino, Seattle, Wash. won a scholarship at Gallaudet College, Washington, D.C. for graduating at the head of her class in the State collect, May 31, 1949.

50 YEARS OF

GREAT CHANGES have come about in the Macaroni Industry since muscles and mules made the wheels go round.

Today's modern streamlined plants are models of cleanliness and efficiency. With improved materials handling, manufacturing techniques and packaging we are rapidly approaching push-button operation in some areas.

Methods of utilization of manpower have been constantly improving so that today the consumer can buy macaroni, spaghetti and egg noodles at slightly higher prices than a decade ago. In the same period the pay to workers in the industry has increased greatly.

There are still problems to solve, frontiers to conquer:

In the field of research: studies must be made to make durum rust resistant to improve present varieties of macaroni wheat. Studies must be made on what kinds of wheat other than durum can best be used for macaroni if durum continues in short supply.

In the field of management techniques: study must be made of the problem of rising costs and shrinking margins. The industry must attract young men, train them, and inspire them to carry on the tradition of progress established in the past half century.

In the field of public relations: the industry is performing an increasingly important function of improving relations with the growers of our raw materials, with suppliers, with the trade, and with the consuming public, encouraging them to use more of our products.

The industry organized a trade association fifty years ago to meet problems collectively. It is to your best interest to support . . .

•

The National Macaroni Institute

The National Macaroni Manufacturers Association