

THERMINOL HEAT TRANSFER

Food Industry Penetration

Stanley Shaw

October 13, 1966

MONS 037782

SUMMARY

During the past few months, the Food Processing Industry has been reviewed for THERMINOL sales potential. The results of this survey reveal considerable potential for many small systems, however, the application of THERMINOL will seldom involve fluid fills beyond the range of 50 - 300 gallons per system. The majority of the systems will be toward the 50-gallon figure. These volumes per plant can and will be increased, though, with the adoption of THERMINOL systems, within food plants, to perform space heating function as well as process heating. Only with the advent of new plants will this multi-function system potential be realized.

However, the acceptance of the philosophy of liquid phase process heating in the Food Industry is part of the overall scheme of mass acceptance for all industries. Every small system has tremendous promotional value. Remembering that our market is really the heating market, and our long range strategy is achieving synonymy of Monsanto and heat transfer, the large-volume orders will follow.

Our method will simply be to promote, to be knowledgeable about, and to actively follow any and all potential THERMINOL sales to the Food Industry as well as provide sincere pre- and post-facto service.

OBJECTIVES AND JUSTIFICATION

It appears that the Food Processing Industry exhibits great potential for utilization of THERMINOL in indirect heating systems. From time to time, over the last few years, we have received interest from food companies

regarding the application of fluids in heating systems. The intensity of this interest has picked up during this economic upswing.

Of significant interest is the fact that during the first half of 1966, the Food Industry led all other industries in mergers with 112. There is a definite trend for large multi-food product companies such as General Foods, Consolidated Foods, etc. to acquire small, successful specialty food processors.

Reviewing THERMINOL business to date in this industry we can count approximately 50 systems in or going into service shortly. The bulk of these systems are in frying applications and their chief proponent here is the Joe Lowe Corporation, Division of Consolidated Foods, who sells a doughnut frying machine in conjunction with the sale of doughnut mix. At last contact Joe Lowe had 31 machines operating in the field.

APPLICATIONS

The list of food applications appears as follows:

Frying

- | | | |
|---|------------------------------------|---|
| 1. Frito-Lay Company
(now PepsiCo, Inc.) | Various in USA | Potato chip manufacture in 7 separate facilities |
| 2. Joe Lowe Corporation
(Division of Consolidated Foods) | Various in USA
(major bakeries) | Doughnut frying in some 31 installations (major bakeries) |
| 3. DCA Food Products, Inc. | New York City,
New York | Doughnut frying
One installation shipped to Burney Bros. Bakery, Chicago, Illinois; now actively marketing fryer |

- | | | |
|---------------------------------------|--------------------------|---|
| 4. Iceland Fish Products Company | Harrisburg, Pennsylvania | Fish chip frying system operating successfully for 20 weeks at time of writing |
| 5. Kroger Company | Cincinnati, Ohio | Shrimp frying installation under construction for their Brownsville, Texas plant |
| 6. Idaho Potato Growers, Inc. | Pocatello, Idaho | Precooking of french fried potatoes (a remarkably successful system operating for 8 years with complete satisfaction) |
| 7. B&C Metal Products (Equipment OEM) | Denver, Colorado | Frying meat patties, 2 installations sold to a customer unknown at time of writing |

Heating of Sugar Liquors

- | | | |
|----------------------|-------------------|-------------------------------------|
| 8. Kellogg Company | Omaha, Nebraska | Manufacture of sugar coated cereals |
| 9. Corn Products Co. | Chicago, Illinois | Manufacture of sugar coated cereals |

Fat Deodorizing

- | | | |
|---------------------------|----------------|----------------------|
| 10. Campbell Soup Company | Napoleon, Ohio | Manufacture of soups |
|---------------------------|----------------|----------------------|

Coffee Roasting

- | | | |
|----------------------------|------------------|----------------------|
| 11. Wilkins Coffee Company | Washington, D.C. | Coffee bean roasting |
|----------------------------|------------------|----------------------|

Candy and Confectionery

- | | | |
|------------------------|------------------|---------------|
| 12. Sophie Mae Company | Atlanta, Georgia | Candy brittle |
|------------------------|------------------|---------------|

13. Stuckey's

Eastman, Georgia

Candy nougat

Specialty Products

14. Pillsbury Company

Terre Haute,
Indiana

Manufacture of
dietetic beverage
mixes ("Funny
Face")

Multi-Function

15. National Tea Co.
(In design)

Chicago, Illinois

Space and process
heating and cooling
entire plant

POTENTIAL OPERATIONS

The following areas appear to be excellent utilization points for heat transfer liquids:

1. Commercial kitchens — for example, where large ovens, ranges, steam tables, etc. are used
2. Fryers
3. Ovens — for baking and cooking
4. Jacketed kettles — coils
5. Drying and roasting equipment
6. Extrusion equipment

PRODUCTS

The following is a list of food areas that appear likely candidates for high temperature processing:

1. Breaded and fried foods
Bakery products, fish, potatoes,
onion rings, egg plant, artichokes,
etc.

2. Baked goods	Bread, cakes, pasteries, cookies, snack foods, etc.
3. Roasted	Coffee, nuts, etc.
4. Candy and Confectionery	Licorice, taffy, caramel, etc.
5. Sugar liquors (cereal coatings)	Sugar glazing for baked and fried goods, candy glaze, etc.
6. Soups, Sauces, Gravies	Fat deodorizing, kettle cooking, etc.
7. Dehydrated Foods (drying)	Potatoes, sauces/gravies, dry beverages; for example, coffee, tea, Kool-Aid, "Funny Face," etc.

From the above it is apparent that we have much to follow in the way of applications potential for the Food Industry. The major question is — How do we find the decision-making customer in the Food Industry? Is it the Central Engineering groups of the major food companies? Is it the bakery and plant superintendents who are pressing for greater productivity and more modern methods of cooking? Is it the owners and officers of the food companies, small and large, who are interested in more modern and productive facilities? Is it the food machinery companies such as Blaw-Knox, Wenger Mixer Manufacturing Company, Food Machinery Corporation, and Harnac-Hansella Company? Is it complete food systems manufacturers such as Smitherm Division of Hupp Corporation who "invent" a method for roasting coffee or frying potato chips who are looking for exclusive and proprietary methods of food cooking? The resolution of this main question is the objective of our "look see" into the Food Industry and its potential for THERMINOL.

SO WHAT?

This document is essentially a plan of action. Our objective is to be so knowledgeable concerning the Food Industry as to be most effective in exploiting that industry.

Here, we will document what must be accomplished prior to a successful "invasion" of this industry with a concept new to this industry. For the most part, the advantages of using THERMINOL as an indirect heating medium outweigh the disadvantages; or perhaps, put another way, the disadvantages of utilizing more common cooking and heating techniques allow for the success of a concept such as indirect fluid heating.

WHERE THERMINOL FITS IN

The THERMINOL system advantages, which are obvious in industrial process heating, are here, too, prominent in their performance virtues. Uniformity of cooking and frying are especially important in the Food Industry. Here THERMINOL systems provide this accomplishment. Also, indirect fluid heating with THERMINOL provides it safely and most economically.

There has been no existing THERMINOL application, reviewed by the writer, where the use of liquid phase heating has not shown real advantages. Also, these advantages are enthusiastically revealed and proudly acclaimed by both the machine manufacturer and the ultimate customer-user.

In summary, we have something to sell, we have a receptive buyer. We have a market which is improving its image from conservative to progressive. And, importantly, corporate-wise we have good knowledge of this industry

and have always been a major supplier to them. Our field sales staff (fine chemicals) can certainly be utilized and with THERMINOL training can be most productive.

MARKETING BARRIERS?

There are three important barriers prohibiting a runaway success of the concept of THERMINOL heating in the Food Industry:

1. Who is the process design influence in the Food Industry? We must resolve this question before we can hope to make any headway. We must reach this specifier.
2. We must promote and educate. The influence mentioned above must be introduced to the concept; educated to the concept; and, pardon the pun, must be allowed to digest the concept. We must make available whatever technical help may be necessary to assure the success of systems in this industry, since it is far less likely that good engineering help is available here than to, for example, the Chemical Process Industry.
3. We must vividly and specifically define the toxicological characteristics of THERMINOL, not only from an inhalation point of view, but more importantly, from an ingestion point of view. It is important, in fact imperative, that we develop methods of detecting contamination of cooking oils that may be indirectly heated with THERMINOL, as well as contamination of the food products themselves.

Climbing these barriers will allow for a very steep sales curve for THERMINOL in the food business.

SUCCESS TO DATE

We certainly have the "tools" which will help us achieve our objectives. We do have a long history of successful THERMINOL applications in the Food Industry. For example, there is the precooking of french fried potatoes by Idaho Potato Growers, Inc. in Pocatello, Idaho. Here is an installation that has been in operation for 7 or 8 years with no change in fluid and without maintenance problems to our knowledge. But this installation is not unique. For over 11 years, Frito-Lay in Jacksonville, Florida, has been frying potato chips for the North Florida area. This installation has never seen a change in fluid and they've had perhaps no more than 25 gallons added as make-up in all that period of time.

The newer installations, such as Joe Lowe Corporation doughnut fryers, have been received enthusiastically. Management at Joe Lowe indicates very real advantages for this method of frying bakery products. For example, the gentle and even heat provided by the THERMINOL heat oil bath gives doughnuts of 10% greater size with the same quantity of dough. Of course, the baker has the option of passing the savings on to his customers or improving his profit picture. We note new Joe Lowe installations going in monthly at major bakeries throughout the country. There are 31 installations to date spanning the country from coast to coast. Such companies as Continental Baking, Interstate Baking, General Baking, Atlantic and

Pacific Company, Horn and Hardart Company, etc. are enthusiastic and complimentary about the application.

The success of frying indirectly with THERMINOL has incited the fish products companies to get involved with this method of heating. Most recently, a small equipment manufacturer in Denver, Colorado, B&C Products Company, has designed, built and shipped fryers for meat patties. One of these machines was commissioned by a national food chain (presently anonymous) who has also given B&C a standing order for ten additional units should the first one prove successful. For 20 weeks now, Iceland Fish Products of Harrisburg, Pennsylvania, has been frying fish chips in what is perhaps the most modern, automated convenience frozen food plant in the country. Also, the Kroger Company of Cincinnati, Ohio, is building a shrimp frying installation for a plant in Brownsville, Texas. They are convinced of the practicability of the approach and feel the advantages will tell in increased production and superior quality product.

REVIEWING THE BARRIERS IN DEPTH

Hurdle No. 1

Over the past two or three years, as we have become more involved with food applications, we have noticed a diversity of the influence for specifying food processing methods. There seems to be no predominant specifying factor. This is confirmed by the writer in field visits to various companies involved in food processing and by review of call reports of these field Functional Fluid salesmen. This is probably indicative of the rather conservative and staid nature of the engineering aspects of the

business. However, there are acute signs that the situation is improving with the establishment of "systems" manufacturers who specialize in complete food processing plants.

The following have all, at one time or other, been involved in influencing a decision toward indirect heating with fluids:

1. The Central Engineering groups of the major food companies.
2. In small plants, the bakery and food plant managers and/or superintendents.
3. Again, in small facilities, the owners and officers of the companies (this can also be applied to medium and large size food companies).
4. The major food machinery manufacturers such as Blaw-Knox Company, Wanger Mixer Manufacturing Company, Food Machinery Corporation, etc.
5. Systems manufacturers such as Smitherm Division of Hupp Corporation, who patent proprietary methods of indirect heating.
6. The small, specialized user equipment company such as B&C Products Company in Denver, Colorado (meat patty fryers), the equipment divisions of food companies such as Joe Lowe Company (doughnut fryers), McBeth Engineering Company (potato chip fryers), etc.
7. A new influence in the market is the small design and development company who specializes in the Food Industry, such as Design + Process Engineering, Inc. of Waltham, Massachusetts, who builds complete plants.

Hurdle No. 2

Once we more accurately establish the specifying influences, we will at least have our target. Promotion and education becomes a simple step since we have already achieved acceptance of the concept in the Food Industry. In other words, it will then be only a matter of directing the results of these successes and the reason for the use of THERMINOL in these applications to the potential customers.

It is interesting to note that the bulk of THERMINOL systems in the Food Industry are associated with the convenience foods. It is known that these types of food products are more expensive than uncooked or "must be prepared" food items. It certainly should be obvious that the major reason for the indirect fluid heating system here is the economies it allows. In effect, the food companies are able to make the convenience food items more attractive price-wise to the consumer. As competition builds up in the convenience food area, these prices will come down still lower. Higher productivity via fast, uniform cooking and frying is a must if the "convenience food" supplier is to survive. Lately, the consumer has exhibited mass rebellion to the increased prices for food products. THERMINOL systems present a solution.

We must direct this solution to the Food Industry. This can be done most effectively by advertising to and direct mail promotions to the specifiers determined via Hurdle No. 1. In this industry, this is the type of concept that "snow-balls" and as new equipment is designed and installed, the tendency to copy the successes of your competition predominates.

Hurdle No. 3

The most intriguing history regarding the application of THERMINOL in indirect heating systems is the almost complete absence of medical and health problems in over some 800 installations around the world. Even more surprising is the fact that in food applications there have been no reported toxic effects, effects of contamination (if contamination has ever been proven), nor has there been any litigation in the Food Industry where THERMINOL has been involved.

Beyond this, for over two years now, West Bend Company has been marketing a multi-wall fry pan for domestic application which uses THERMINOL as the liquid core fill. In all this period of time, we have had no adverse feedback regarding the performance of this unique application for THERMINOL. This is truly astounding insofar as approximately 250,000 pounds of THERMINOL FR-3 have been sold to West Bend to date. When you consider that only 14 ounces of THERMINOL are used per pan, a quick calculation will show that there are a large number of homes exposed to the advantages of indirect heating with a safe heat-transfer liquid. We have yet to be asked for technical help from West Bend (since our initial help in developing the pan). Too, concern over toxicity has not been a problem nor have we been asked to help in any litigation between West Bend and their customers, if any has taken place against them. Nevertheless, while the Food and Drug Administration holds no jurisdiction over a product not normally in contact with the edible food product, it may come to pass that "possible contamination" may be injected into the Food and Drug Administration rulings. We should well document the ingestion characteristics of THERMINOL as well as other physiological effects. Simply, we must be able

to state that so many grams or ounces of THERMINOL can be tolerated by an average human system with such and such an effect when accidentally ingested. This may call for actual human taste panel tests with accompanying medical examination of individuals involved.

We must be able to help the systems designer with a simple, effective method for determining contamination of a cooking oil bath or of the food product itself. If no simple technique is available to detect this contamination, Monsanto must make available its specialized analytical laboratory techniques to the customer, at no charge, for this purpose. In summary, we must alleviate any and all concern over possible toxic effects and consequences so that our customer can use THERMINOL with safety and assurance.

OUR GOALS

1. Achieve \$50,000 per year sales volume for Food Industry applications.
2. Prove low toxicity for Food Industry applications.
3. Focus on Food Industry as a route to multi-function (space/process) heating and cooling systems for all industries and institutions (restaurants, hotels, etc.).
4. Train our Fine Chemical field men so they may aid our program.

WHAT CAN WE DO?

Action Plans

1. Advertising and Promotion

<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>
A. Publish four color THERMINOL ad featuring multi-function system Food Industry/Space Heating theme.	RCI/SS	August 1966 (done)
B. Direct mail ad reprints to Food Industry mailing list.	RCI/SS	October 1966 (on schedule)
C. Prepare and publish article on Design + Process Engineering, Inc. fish chip frying installation.	OLP/SS	March 1967
D. Prepare Food Industry literature package for direct mail (conglomeration of all Food Industry articles and ad reprints).	RCI/SS	May 1967
E. Direct mail Food Industry package.	RCI/SS	May 1967

2. Technical

<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>
A. Document systems and/or techniques for determining THERMINOL contamination in cooking oil and food products.	CFD/DER/ E. P. Wheeler	March 1967
B. Complete a concise toxicity statement specifically aimed at Food Industry.	E. P. Wheeler/ SS/RCI	March 1967

3. Marketing

<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>
A. Visit and document completely all existing Food Industry applications.	SS/DER/ Field Men	June 1967
B. Visit ten equipment and system manufacturers known for their activity in the Food Industry.	SS/Field Men	June 1967
C. Visit selected list of New York-headquartered Food Companies.	SS	August 1966 (done)
D. Follow up on all Food Industry interests	SS/Field Men	Continuing
E. Visit appropriate Food Industry conventions, for example, frozen foods convention starting in December 1966.	SS/Field Men	Starts December 1966, Continuing
F. Schedule five formal THERMINOL presentations to the largest Food Industry companies directed toward their Central Engineering groups.	SS/DER/Field Men	By December 1967

4. Administrative

<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>
A. Ascertain the possibility of a THERMINOL/Food Industry strategy as defined by Organic Division outline.	SS	December 1967
B. Write strategy if more than sales plan is required to achieve volume available.	SS	March 1968

CONCLUSIONS

By the end of December 1967 we will have achieved a better understanding of our Food Industry market and the applicability of THERMINOL systems

within that market. En route to this goal we should have been able to "pay our way" by the sale of additional THERMINOL and systems into this industry.

A D E N D A

1. The attached trip report provides an indication of the type of interest and the type of contact prevalent for Food Industry penetration with THERMINOL.
2. Correspondence revealing the interest and potential outside of Monsanto.
3. Some early returns (response) to a direct mailing to the Food Industry.

Monsanto

FROM (NAME & LOCATION) St. Louis - General Offices

DATE September 23, 1966
SUBJECT Trip Report
August 29 - September 1
New York District
TO : G. R. Buchanan/R. Davis

cc AGE/DER
H. A. Gilbert - WILMINGTON
G. R. Graham - NEW YORK
C. R. Groninger - NEW YORK
A. R. Hempel - CHICAGO
D. L. Hosmer - CHICAGO
R. Moran - NEW YORK
D. Olson - NEW YORK
P. L. Slayton - NEW YORK
R. P. Sullivan - WILMINGTON

Objectives

1. To aid G. R. Graham by making exploratory and follow up calls selected from his 1966 sales plan providing relief from heavy workload.
2. Market research of the Food Industry to determine potential for THERMINOL and to gain knowledge of that industry.

Companies Contacted

<u>Company</u>	<u>Contact</u>
Blaw-Knox Company	Jim Gardner, Sales Engineer
Bonomo Candy Div. Gold Medal Candy Co.	Dr. M. B. Sherman, Director Research & Development
DCA Food Industries	Hal Kaufmann, New Products Mgr. Al Spiel, New Process Mgr. Charles Putnam, Gen'l Mgr. Equip- ment Division John Moore, Ass. Research Director
General Foods Company	Stan Barnett, Research Engineer
Hamao-Hansella Company	Tim Long, Sales Mgr.
National Biscuit Company	Jack Rossen, New Process Dev. Mgr
Joe Lowe Company	Ernie Roth, Engineering Mgr. Frank Chipchase, Chief Engineer
Wilmington Food Industry calls preceeding wcek with Hank Gilbert and Don Roush	
McBeth Engineering Corp.	Freeman McBeth
Wilkins Coffee Company	George Payne, Resident Engineer Smitherm Div. Hupp Corp.

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The Itinerary for this week was established as an assist by the Product Group to the district to explore the potential for THERMINOL applications in the Food Industry. The same objective will help the Product Group to complete its commitment for establishing a market strategy for THERMINOL penetration into this industry.

The selected timing for this itinerary prevented it from being as productive as could have been possible should it have taken place after the vacation season. However, through the use of the phone, it was possible to locate contacts at the above companies who were helpful in providing information regarding process and heat requirements.

An earlier contact with Walter Kuzio, Technical Editor of The Candy Industry and Confectioners Journal, led to two contacts who were equipment suppliers to the Candy Industry.

Jim Gardner of the Blaw-Knox Company was completely unfamiliar with thermal liquid heating and was not optimistic at all regarding the use of THERMINOL in Blaw-Knox equipment supplied to the Confectionary Industry. The bulk of his equipment is sold for use with steam and hot water. Generally, the Candy Industry does not see future requirement temperatures above 300°F. with 350°F. as a maximum. Contrary to Jim Gardner's pessimism, the Product Group has witnessed considerable enthusiasm from the Buffalo headquarters staff of the Blaw-Knox organization. In fact, Blaw-Knox has recently supplied equipment to Kroger Company (Cincinnati, Ohio) for a shrimp frying installation in Brownsville, Texas.

Again, contrary to Gardner's thoughts relative to the Candy Industry, Dr. M. B. Sherman, Technical Director of Bonomo Candy Division of Gold Medal Candy Company, was quite enthusiastic. Dr. Sherman revealed that he has written articles on the technology of candy manufacture, one of which indicated the potential use of thermal heat transfer liquids in heating processes. Dr. Sherman also teaches food technology at one of the New York Community Colleges. He has had occasion to discuss the applicability of heat transfer fluid technique with his students. His enthusiasm revolves about the use of THERMINOL to eliminate the high cost of operating labor. Though the temperatures are relatively low, he visualizes completely automated candy production. He is alert to the fact that THERMINOL allows this automation easily and with great economy.

Dr. Sherman revealed a keen interest in working with Monsanto on a "mutually beneficial" arrangement when he leaves Bonomo to take up full time consulting activities to the candy and other process industries. He is currently consulting to Allied Chemical coincident with his work at Bonomo. I indicated an interest in working with him and that Monsanto would look forward to such an opportunity.

Another equipment supplier to the Candy Industry, Hamac-Hansella Company, Palisades Park, New Jersey, revealed an extreme interest in the thermal liquid concept. Their equipment is manufactured in Germany and the New Jersey location was the U.S.A. headquarters and U.S.A. technical service center. My chat with Tim Long, Sales Manager, uncovered the fact that his organization had sold one candy cooking reactor to a customer who had asked that the heat transfer jacket be designed for heat transfer liquids. The customer selected a petroleum based heat transfer liquid for the application. Again, the temperatures are low, and steam is the standard heat transfer fluid. The cooking kettles in question are used for caramel, salt water taffy, candy kisses, toffee, syrups, fudge and can also be utilized for the production of fillings, marmalades, jams, fruit jellies, special syrup and juice concentrates. The heat transfer fluid capacities in these units would be relatively small. Consequently, my review of the Candy Industry from a point of view of process heating does not reveal large volume potential for THERMINOL. However, reverting back to Dr. Sherman's interest (Bonomo Candy), completely automated candy processing plants, where THERMINOL is used for environmental control as well as process heating, would be the key to much larger volumes of fluid in this industry.

The basic principle of the Hamac-Hansella cooking reactor is indicated on the attached xerox from one of their sales folders.

Stan Barnett, Research Engineer with General Foods Company, revealed a long standing interest in the application of THERMINOL to one of his projects now dormant. This involved the sublimation heating step in freeze drying of foods. We discussed the coffee roasting application somewhat. General Foods is very deeply involved in this area with their Maxwell House Division. However, Barnett had no contact with that operation. Maxwell House Coffee Division Engineering would be the contact point there. Barnett is involved with Corporate Research and all divisions normally do their own engineering. I discussed the possibility of a formal THERMINOL presentation to a mass audience at the General Foods Technical Center also implying the applicability of THERMINOL in facilities heating. Barnett immediately contacted Al Miller of the Facilities Engineering Group who was tied up and could not give me an audience. However, he indicated on the phone to Barnett that he would welcome, and make available his staff, for a formal presentation on THERMINOL heating.

Barnett indicated much enthusiasm for a formal THERMINOL presentation late in the year. He suggested we schedule this after he has had an opportunity to build a staff.

During conversations with DCA Food Industries, it was learned that one of the doughnut frying machines developed at their Ellicott City, Maryland plant was shipped to the Midwest for installation in a customer's facility. The installation was made on a contingency basis that it would be paid for if satisfactory to the

customer. I later learned this week at Joe Lowe Company, Englewood, New Jersey, that the DCA installation went to the Beatrice Foods Division of National Tea Company. They have some connection with the Bernie Brothers Company in the Chicago area. The writer would welcome clarification of the relationship between these three companies and which of the operations are frying doughnuts as well as the exact location of the equipment. (Dave Hosmer please note!)

DCA is extremely interested in reviewing other food areas where indirect heating with THERMINOL would be applicable. They would welcome any opportunity to work on mutually beneficial projects. While basically a family owned company, DCA exhibits a desire for progress and innovation. They are currently looking at microwave heating techniques and in fact, revealed an interest where THERMINOL is applicable as a cooling media in micro-wave ovens. The writer intends to explore this further. In discussions with Joe Lowe, I learned that they currently have 31 doughnut fryers in the field. Two of the last units were sold to Continental Baking Company in Brooklyn, New York. All units are currently operating satisfactorily since Joe Lowe has taken over the engineering of the systems from the Cleaver Brooks Company, supplier of the heat transfer package. The difficulty encountered previously was severe leakage of the circulating pumps on some of the systems. This has evidently been corrected by the re-design of the pump base providing firmer footing. Ernie Roth, Manager of Engineering at Joe Lowe, indicated an extreme optimism for the future of THERMINOL within the bakery industry. He had conversations with Continental Baking at their Rye, New York headquarters with Ed Hildebrand, Director of Engineering. Hildebrand disclosed an interest in THERMINOL for complete plant heat requirements. An additional contact at Continental in Rye is William Kollman, Assistant Director of Engineering. He, too, is aware of THERMINOL and its potential in the baking industry. By copy of this report, it is recommended that Randy Graham contact Ernie Roth at Joe Lowe requesting him to arrange an interview with Continental at Rye. Ernie indicated he would be happy to do this for Randy when contacted.

National Biscuit, Fairlawn, New Jersey is in the throws of a re-organization of their New Process and Engineering Groups. The New Process Development Department headed by Jack Rossen is brand new. In discussing possible applications for THERMINOL at Nabisco, again, the main attraction would be applying the liquid heating in new facilities where environmental control as well as baking and frying are the usage areas. One immediate area of interest of Rossen's is the extrusion of doughs which takes place in the range of 300°-400°F. Again, Rossen is gaining familiarity with his own processes as well as fighting the battle of achieving renown for his new department. He is a new employee of Nabisco, having come from General Foods in Tarrytown, New York

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Attempts to contact additional possible users of THERMINOL in the Food Industry were thwarted due to vacations and poor timing. Phil Slayton, Bob Moran, and Don Olson were most helpful in digging up contacts at various companies. Additional contacts which were not made because of the press of time should be followed:

Standard Brands, Inc.
Central Engineering Dept.
New York Office
Pl. 9-4400

William C. Neumann
Ray Schwab, Mgr. Quality Control
Research Center, Stanford, Conn.
Larry Kogen, Quality Control
Research Center, Stanford, Conn.

Nestles, Inc.
White Plaines

Mr. S. J. Lirot

Colgate Palmolive
Jersey City, N. J.

Mr. Charles Martin, Development
Engineer, Research Department

The previous week, accompanying Hank Gilbert and Don Roush, the writer visited McBeth Engineering in Harrisburg, Pa. McBeth is designing an indirect fluid heated frying machine with the objective of marketing this competitive with existing fryers on the market. (His first attempt at interesting a potential customer is General Mills in Minneapolis. The application is the frying of their new snack sensation "Bugles".)

We agreed to review his specifications and drawings and cooperate in any way possible. McBeth appears to be a very strong influence in the complete potato chip plant equipment business and is apparently interested in expanding their speciality to other food products.

A visit to Wilkins Coffee Company in Washington, D.C. disclosed very complete and modern coffee roasting installations. It is evident that the process has some real advantages, however, some of these advantages have been dampened by the fact that the cost differential between a low quality coffee bean and a high quality bean is narrowing. In discussions with various people interested in coffee roasting in the field, the writer learned that there is negligible interest in the Smitherm process. I was interested to learn that the Smitherm process and equipment is leased to Wilkins Coffee on a long term basis (10 years). This can be extremely profitable for Smitherm should they make deeper penetrations into this business. Smitherm has always continually been plagued with lack of marketing acumen.

Generally, the week was informative to the writer by giving him a deeper insight into the problem and requirements of this industry. The Food Industry "look see" that the writer is currently composing will summarize what was learned and we will provide recommendations for greater penetration into this industry.

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A second week devoted to the Food Industry, with more appropriate timing, should be scheduled. It is suggested that Randy Graham pursue this with the writer with a date mutually agreeable, but certainly later in the year.

/ng
Attachment

S. Shaw

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Roma.

JOE LOWE COMPANY

10 ROUTE 4  P. O. BOX 200

ENGLEWOOD, N. J. 07631

(201) 867-8500

Please Address Reply to:

EQUIPMENT DIVISION
40 ROCKWOOD PLACE
ENGLEWOOD, N. J.

NEW YORK PHONE:
924-7876

CABLE ADDRESS:
POPBICLE, ENGLEWOODNEWJERSEY

October 24, 1966

Monsanto Chemical Company
Organic Chemicals Division
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166

ATTENTION: MR. S. SHAW, MARKET SPECIALIST - FUNCTIONAL FLUIDS

Dear Stanley:

For three days last week, I sat in on the Task Committee on Donut Equipment at the Hotel Sherman to set up Sanitation Codes for Donut Equipment.

The Chairman of this group is Mr. Cy. Madeley, American Bakeries Company, 10 South Riverside Plaza, Chicago, Illinois. The biggest single problem we had to contend with is that the sanitarians of both State and Local Government, Mr. Whitey Winters of The Kroger Company as well as a Representative of the City of New York, insist that firing tubes must be eliminated from donut kettles. This, of course, puts the Joe Lowe Company ahead of everyone else because of the "REMO-THERM" Fryer and the use of THERMINOL FR-2 as the heat transfer fluid.

During the discussions, I pointed out how the principle we use can have a broader application in the entire baking industry. I went into a great amount of detail on this with Mr. Madeley, who I believe is Chief Engineer of American Bakeries Company and who has two of our "REMO-THERM's" in their plants -- one in Detroit, Michigan and one in Brooklyn, New York.

Having had the experience with this remotely heated fryer, he is very impressed with its principle. He was equally impressed with the possibility of using this throughout the bakery for steam, heat, coal, and wherever hot water is required. I told Mr. Madeley that I had talked to you about this sometime ago and thought that Monsanto would go through a couple of bakeries to see what the requirements are for heating, cooling, refrigeration, steam and hot water; and perhaps Monsanto can make a study on it and see how remote heating can be applied to the baking industry.

MONS 037807

MELROSE PARK, ILL.
CITY OF INDUSTRY, CAL.

LOS ANGELES, CAL.
VANCOUVER, CAN.

TORONTO, CAN.
WINNIPEG, CAN.

SAN FRANCISCO, CAL.
MONTREAL, CAN. LONDON, ENG.

October 24, 1966

I honestly feel that you people should do something about it because this opens an entire new area for the use of THERMINOL and I am convinced, furthermore, that if a big central unit were placed in a bakery, tremendous savings would be accrued in the building of a new plant and at the same time make for a more efficient operation.

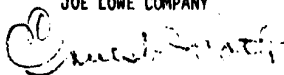
If you have discussed this with your associates since our last meeting together and have not pursued it further, I would like to suggest that you do so because you will have a very receptive ear with Mr. Madeley, as well as some of the other members, namely Mr. Ed Hildebrandt and Mr. William Kollman of the Continental Baking Company, Mr. Ernest Stolzer of Ward Foods, Inc. and I am sure many other outfits could be added to this list for a study.

If per chance my use of the English language does not clarify the situation, I would be happy to get together with you wherever you say and give you my thoughts and suggestions on how remote heating can be used in the baking business and from there, you can talk with Mr. Madeley, getting permission to go to one or a number of his plants to make a real study on the possibilities of applying the system to bakeries.

With sincere best wishes, I remain

Very truly yours,

JOE LOWE COMPANY



EQUIPMENT DIVISION

Ernest J. Roth
Director of Engineering
mb

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

Mr. Edward Rubin
East Coast Fisheries Inc.
360 W. Flagler St.
P.O. Box 3277
Miami, Florida 33101

INQUIRER'S INTEREST:

Therminol PR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/11/68	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

Mr. Wayne K. Pugh, Product Manager
Sees Candies Inc.
210 El Camino
So. San Francisco, California

INQUIRER'S INTEREST:

Therminol PR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/13/68	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

MONS 037809

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM:

Mr. Ross Brian
Chief Engineer
Lauhoff Grain Co.
321 East North
Danville, Illinois 61832

INQUIRER'S INTEREST:

Therminol FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/11/66	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"I'm taking a fresh look at the
cooking of starch."

MARKETING SERVICES — CHEMICALS ADVERTISING & SALES PROMOTION BSS

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM:

Mr. John H. May, Vice President
Bolly Hill Fruit Products Co., Inc.
P.O. Box 5
Davenport, Florida

INQUIRER'S INTEREST:

THERMINOL FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/3/66	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

MONS 037810

MARKETING SERVICES — CHEMICALS ADVERTISING & SALES PROMOTION BSS

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM

Mr. Ross Brian
Lauhoff Grain
321 East North
Danville, Illinois 61832

INQUIRER'S INTEREST:

THERMINOL FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/2/66	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM

Mr. John Mazzi, Maint. Supt.
Limpert Bros. Inc.
N.W. Blvd. & Plum St.
Vineland, New Jersey

INQUIRER'S INTEREST:

Therminol FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/11/66	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

I'm taking a fresh look at the
"cooking" of Fruits and toppings
for ice cream - in place of high
pressure steam."

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION

MONS 037811

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

Mr. A.C. Veen, Plant Manager ✓
Bovey's Inc.
771 Bedford Avenue
Brooklyn 5, New York

INQUIRER'S INTEREST:

THERMINOL FR

ACTION TAKEN	REQUEST	ACTION NEEDED
	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"I'm taking a fresh look at the
drying of 30% moisture content
cocoa beans."

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

Mr. O.D. McKee, President ✓
McKee Baking Co.
Box 568
Collegedale, Tennessee

INQUIRER'S INTEREST:

THERMINOL FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/3/66	SEND LITERATURE	
	SEND SAMPLE *	
	QUOTE PRICE *	
	SALESMAN CONTACT *	
	ADDITIONAL INFO. *	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"Taking a fresh look at the
cooking of cakes, cookies, pies.
We are building a new plant with
8 ovens."

MONS 037812

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM:

I.A. Pass, Secretary
SEA PASS CORPORATION
4900 Manchester
St. Louis, Missouri

INQUIRER'S INTEREST:

Therminol FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/2/66	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"cooking of frozen seafood"

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION DEPT
G-400 REV. 2/64 ST. LOUIS, MO.

MonsantoPRODUCT GROUP
RECEIVED AN INQUIRY FROM:

Mr. E.P. Christulides, Mech. Supt.
NATIONAL BISCUIT COMPANY
6425 Penn Avenue
Pittsburgh, Pa.

INQUIRER'S INTEREST:

THERMINOL FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/3/66	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"I'm taking a fresh look at the
cooking of cookies & crackers."

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION DEPT
G-400 REV. 2/64 ST. LOUIS, MO.

MONS 037813

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

✓
Mr. C.S. Ekerrayer, Plant Manager
STANDARD BRANDS INC.
P.O. Box 535
Pennsauken, New Jersey 08110

INQUIRER'S INTEREST:

Therminol FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/2/65	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

"I'm taking a fresh look at the
seal sealing of packaging materials."

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION B33
G-408 REV. 2/64 ST. LOUIS, MO.

MonsantoRECEIVED AN INQUIRY FROM: **PRODUCT GROUP**

✓
Mr. R.G. Kelly, Chief Engineer
SUNLINE INC.
8100 Water St.
St. Louis, Missouri 63111

INQUIRER'S INTEREST:

Therminol FR

ACTION TAKEN	REQUEST	ACTION NEEDED
11/2/65	SEND LITERATURE	
	SEND SAMPLE*	
	QUOTE PRICE*	
	SALESMAN CONTACT*	
	ADDITIONAL INFO.*	

* SEE ORIGINAL REQUEST ATTACHED

COMMENTS:

MONS 037814

MARKETING SERVICES - CHEMICALS ADVERTISING & SALES PROMOTION B33
G-408 REV. 2/64 ST. LOUIS, MO.