



PANGBORN TO EXHIBIT GOLDEN OPPORTUNITIES FOR FOUNDRYMEN

... and Issues a Challenge

About 40% of all exhibits at the 1966 AFS Castings Congress and Exposition in Cleveland, May 9-13, will introduce one or more new products.

This includes Pangborn.

Our exhibit this year—in Booth 823-825—will be filled with new ideas and concepts. We believe these innovations are significant . . . that they indeed offer Golden Opportunities for foundry operators to cut their costs, increase production, improve casting finish, and extend their markets.

We concede that almost all industrial machine and supply companies these days promise new ways to speed production and reduce costs. So it is sometimes difficult to react with enthusiasm when these terms are used. But we are enthused about our new Pangborn developments—enough to label them Golden Opportunities and then challenge you to “Challenge Us” to prove our claims.

Here's what you'll see at the Pangborn display:

1. A new concept in Rotoblast machines . . . one

that almost thinks for itself. Unique and extremely versatile, this cleaning system is believed capable of replacing many types of equipment now used in foundry cleaning rooms.

2. A special high production blast cleaning machine to continuously process parts with 100% efficiency in abrasive application.
3. New profit producing features in an automated 36 cu ft Rotoblast barrel with the most efficient core knockout cycle in the industry.
4. Rotoblast Steel Shot and Grit premium abrasives for all blast cleaning requirements.
5. High temperature dust and fume control for cupolas and foundry furnace applications . . . systems that really work.

Any one of these alone could make your trip to Cleveland well worthwhile. Stop at our booth and see for yourself. If you still don't believe it, CHALLENGE US!

GOLDEN OPPORTUNITIES

LG Rotoblast Table Eliminates Five Tumblers At Columbus Iron Works Company

"We were convinced the Pangborn table was the best buy available—both from an engineering and service viewpoint."

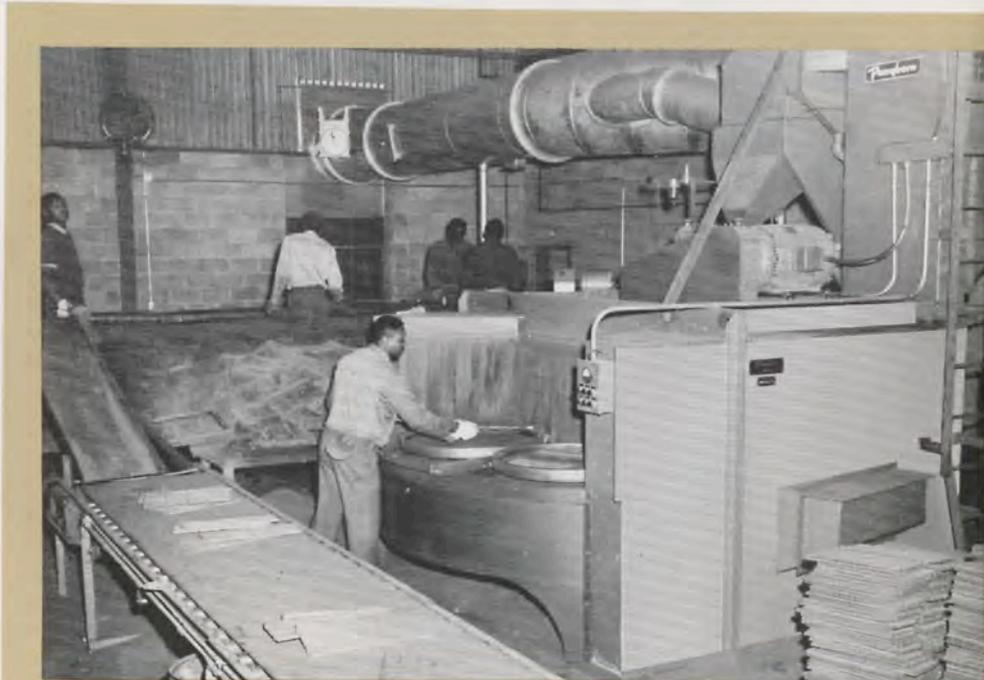


When Columbus Iron Works Company built a new foundry in 1965 they installed the latest mechanized equipment available. In the process, they obsoleted five tumbling barrels used in their previous foundry and replaced them with one Pangborn 10 LG Rotoblast table. Vice president C. H. Tidman and foundry manager Dave Pezdirtz, after careful investigation, specified the Pangborn unit because they had determined it was the "best buy available."

Installed in the cleaning room, the Rotoblast table is used to clean and deflash cast gratings, hoods and doors used in the manufacture of outdoor barbecue units. (See photo) The castings arrive warm from the foundry on an apron conveyor, pass a chipping station and continue down an incline to the Rotoblast unit. The operator transfers the workpieces to the machine where they are cycled and thoroughly cleaned (both sides) in just 2½ minutes. Placed on a belt conveyor, the castings move on to following operations. The table is used eleven hours a day and satisfactorily answers production demands which have already increased since the new foundry's opening.

This new foundry, located just outside Columbus, Georgia, occupies 77,520 square feet. It is equipped with a pallet system, mechanized sand handling equipment, and conveyors and mechanized equipment for cleaning and handling of castings.

In the foundry business since 1853, Columbus Iron has been modernized and enlarged several times



Used to clean and deflash cast barbecue gratings, hoods and doors, the Pangborn LG Rotoblast table has replaced five tumbling barrels. As hot castings arrive from foundry on a conveyor, they pass a chipping station (background) and are then fed to the Rotoblast. Machine's revolving platform includes six auxiliary work tables which accept a wide variety of castings. Cleaning time—2½ minutes.

... which is probably the reason for its highly successful operation today. Incorporated in 1856, Columbus manufactured water wheels and brass and iron castings. In the early years of the Civil War the plant turned out shot and shells and even gun boats. Following a fire started by Federal troops in 1865, the rebuilt firm manufactured ice making machinery and built the first commercial ice plant in

the country. The Southern Plow Division was established in 1877 for the production of agricultural implements. In 1927 they supplemented their product line with stoves and heaters to fully utilize the production capacity of the foundry.

Remember when outdoor cookers were placed on the market? Columbus began producing these in 1948. Since that time this line has ex-

Type LG Rotoblast Tables

This modern Pangborn blast cleaning table consists of four integrated units:

1. A revolving platform with auxiliary work tables—usually six
 - When auxiliary tables move into the cabinet they begin to rotate throughout the blast zone exposing all surfaces of the work to the action of the Rotoblast stream.
 - Work with deep pockets, intricate castings and multisurfaces are best cleaned on this type table.
2. An abrasive-throwing mechanism—the Rotoblast® wheel
 - Most efficient abrasive-throwing unit in the industry
 - This centrifugal wheel uses higher horsepower to throw more

abrasive per minute, to clean faster.

3. A scraper
 - Operates independently of the table to carry away spent abrasive, fines, molding sand or scale.
4. An abrasive conditioning system
 - Accepts spent abrasives, fines, etc. and separates the good abrasive for return to the system. The balance is discarded.

Years of experience and specialized engineering know-how have refined these components into a thoroughly reliable blast cleaning tool producing high tonnage of beautifully cleaned work at remarkably low cost.

panded so much it is now one of their major products.

There is much more to the Columbus Iron story. But it's apparent that this company has grown up with

the foundry industry and their success is due in large measure to adaptability, expansion and, of course, sound business judgment.

GOLDEN OPPORTUNITIES

New For Internal Cleaning of Intricate Castings

DON'T SHAKE 'EM, VIBRATE 'EM!

Pangborn now offers a brand new vibratory method for cleaning internal passages of intricately cored castings. The new machine will satisfactorily loosen adhering cores which cannot be removed by standard shake-out. At the same time, it takes it easy on castings which can't stand the rough treatment resulting from rigorous shaking. The gentle and effective vibratory operation allows even pre-machined castings to be internally cleaned without affecting the external finish.

The new Pangborn vibratory units are available in two sizes—3 YJ and 6 YJ. Maximum capacities are 400 lb and 900 lb respectively.

The photo shows three valve body castings fastened to the sturdy 1-inch thick steel vibrating table of a 3 YJ. In this case anchor bolts secure the castings; however, fixturing would prove entirely practical. The fourth casting is not secured so that all passages may be seen. Elliptical vibratory motion is regulated by an infinitely variable speed control to assure the right vibration frequency for optimum cleaning results. These valve bodies are internally cleaned and deflashed in just 30 minutes.

The valve bodies shown above are heavily cored with a high con-

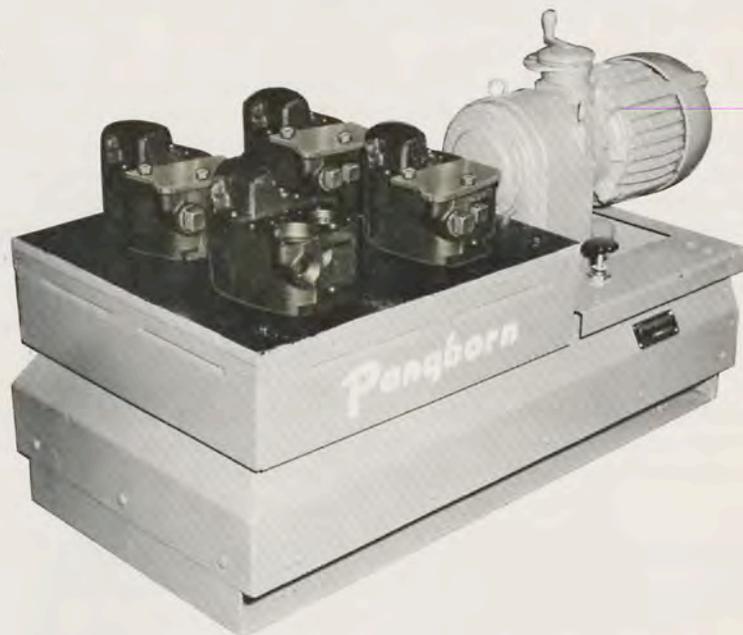
centration of adhering sand. Therefore, no media is used: instead, the sand which is loosened acts as its own media to scour clean passages and remove any light flash.

Parts with reasonably clean passages may not have enough core sand to act as its own media. In this case media can be added—small steel or iron scraps, balls, slugs and the like. The castings are filled with media and all holes are plugged. The vibratory

motion generates a scrubbing action between the media and all internal surfaces so that rapid and thorough cleaning results.

Use of media is also recommended for parts with heavy internal fins or flash.

This new Pangborn development provides another Golden Opportunity for foundrymen to improve casting quality and reduce their costs. Ask about it at the Foundry Show.



High Temperature Dust Control Deserves Individual Attention

Some air pollution and dust control equipment manufacturers and consultants have stereotyped solutions to the problem of fume emission control and collection. If there is anything Pangborn has learned in its 60 years in the dust control field, it is that each dust or fume problem has individual characteristics which must be carefully studied before selection from a broad line of solutions can be made. This results in a tailored total system which answers various state and local regulatory needs . . . without being overdesigned or overpriced.

Take, for example, an electric arc furnace. Hot fumes and gas which would otherwise invade the work room, can be extracted from the furnace by one of four methods: (1) a furnace roof hood, (2) a canopy hood, (3) direct shell evacuation or (4) a side draft hood. Pangborn can supply all these, plus dust and fume collection units with a wide variety of filter fabric bags.

Before a selection of any kind can be made, however, a Pangborn engineer must live with the furnace for a full two days. In that time, he can learn if the furnace practice is acid or basic, the quantity of oxygen used for carbon reduction and refining, the physical aspects of the furnace, if the slag door is kept closed during melting, the type of scrap melted, the fluxes which are used, the temperature of the gases and other critical factors.

The temperature of the gas and fume is particularly important. With temperatures below 300° F at the collector, orlon or dacron filter fabric can be used. But some emissions cannot be reduced to that temperature. At 500° to 600° F it is necessary to specify a fiberglass fabric for filtration. But if the fluxing agents used contain fluorspar the glass fabric is not recommended.

The same careful study must be made of cupola problems. Pangborn offers three different types of collectors for

this type of production installation: (1) fabric, (2) wet-type and (3) mechanical.

The so-called production cupolas capable of producing 35 to 40 tons of iron per hour are usually charged with class "B" automotive scrap. The metallurgy of such a melt requires special processing of the gases and particulate prior to their introduction into a fabric collector. On the other hand, handpicked scrap may be used in smaller cupolas. Here particulate and gas are considerably different and require fewer safeguards. For instance, expensive after-burners common in large cupolas are not necessarily needed in smaller furnaces.

A cupola furnace practice can be acid or basic. High temperature emission control methods will depend on which is employed. In turn, the fluxing is dependent upon the particular practice. Again, if the fluxes contain fluorspar, the use of fiberglass filter fabric is ruled out.

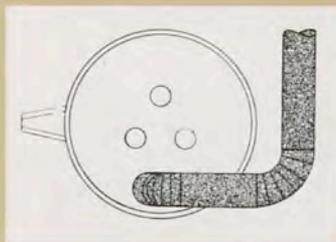
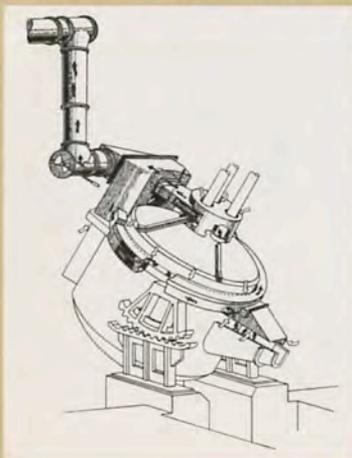
The ideas presented here only begin to cover this subject. We present them mainly to make this point: high temperature dust control doesn't follow a clear cut path. Much information has to be carefully analyzed before the most practical and effective methods can be specified.

Air pollution control is a field where you can really save money by doing it right the first time. And this is especially true where high temperature fume is involved.

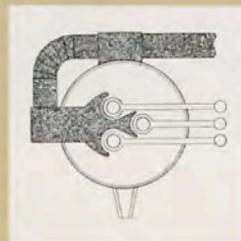
Doing it right is what Pangborn does best. Let The Pangborn Man go to work on your air pollution problems.

Foundry shakeout, sand handling, core preparation, grinding and finishing are other aspects of foundry operation which demand dust control. Pangborn's wide variety of equipment, its engineering and experience has been effectively applied to these dust sources throughout the foundry industry.

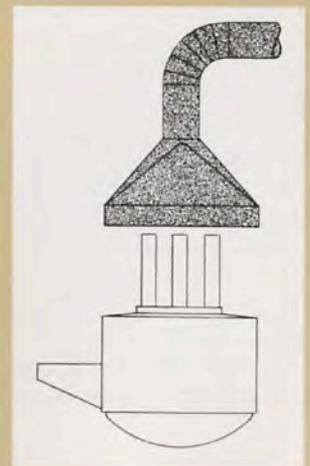
FURNACE ROOF HOOD



DIRECT SHELL EVACUATION



SIDE DRAFT



CANOPY HOOD

4 TONS OF GAS AND FUME TRAPPED PER DAY



This modern-looking housing is one part of a large complex high temperature dust control system which services a 40-ton electric furnace. It is a Pangborn development specially designed to control hot gas and fume emissions up to 2500°F to 3000°F. Every day it collects four tons of particulate which otherwise would spread over the plant grounds and vicinity — violating county and state air pollution regulations.

The user of this equipment is a large eastern steel caster. Their foundry pours 150 tons of steel alloy each day and in the process creates a great amount of gas and fume. To achieve the high degree of metallurgical control required for quality steel production, the furnace is oxygen lanced which compounds both the emission and temperature problem.

After thorough study of this severe dust and fume problem, Pangborn recommended that direct shell evacuation be employed along with the special collector shown above. Emissions are arrested at the "fourth hole" before they escape into the foundry atmosphere. The hot furnace gases at 2500°F+ are drawn through a water-cooled elbow, and dilution

with ambient air at the elbow area lowers the temperature to less than 900°F. The atmospheric air brought into the system at the elbow area also assists in reducing carbon monoxide to carbon dioxide. Gas and fumes continue then through a considerable length of steel pipe to the bag housing. In route it is cooled to 300°F.

The large fan which draws the fumes is situated between the furnace and the dust collector. So actually emissions are drawn to the fan and then forced into collector.

Note location of the fan, the opened bottom section of the housing and the vents at the top on the photograph. Fumes and gases below 300°F are forced into the collector and distributed inside the special synthetic filter fabric bags. The relatively high temperature inside the dust collector housing creates a stack draft effect causing the cooler outside air to enter the bottom of the housing and discharge from the louvered top section along with the cleaned furnace gases.

This Pangborn dust collector design, therefore, offers two exclusive advantages of major importance in high temperature gas and fume control: (1) longer bag life and (2)

maintenance operations without costly downtime.

Extended bag life results because hot emissions are routed directly into the bags while the up-draft simultaneously cools the outside of the bags. A mean temperature is created which is considerably below 300°F. The lower temperatures increase bag life by an appreciable degree . . . to save money.

Because the high temperature is for the most part inside the bag and a cooling draft is present, a maintenance man can service a bag section while other sections continue to control the foundry fumes. Result: the foundry and surrounding atmosphere remains clean at all times.

The bag housing is 54 ft long, 20 ft wide, and 32 ft high. The entire unit is protected by built-in safety devices which prevent temperatures from exceeding 300°F at the dust collector inlet. In the event of emergencies, gases bypass the collector and discharge to the atmosphere.

This installation is Pangborn's answer to this particular problem . . . exactly what the doctor ordered. A satisfied customer and satisfied state officials heartily agree.

NEVER TOO BUSY

What An Abrasive Can Do Depends
Solely On What An Abrasive Is



When it comes to blast cleaning abrasives your primary interest probably begins and ends with *how to get the job done properly at lowest overall cost.* (And this is as it should be.) Any further interest you have undoubtedly is related to the reasoning and the *proof* that one brand or size or type can meet this essential requirement better than others.

We are willing to state positively that Rotoblast Steel Shot is your best buy. And here's why.

What an abrasive can do depends solely on what an abrasive *is*: how it is made. Ours starts with premium scrap bought at a premium price. Melted in laboratory-controlled electric furnaces, no guesswork is employed which could result in inconsistent, poor quality abrasive. After

shotting, the product is then passed over an automatic mechanical separator which categorizes standard sizes. To provide excellent martensitic structure the shot particles are heat treated in an RS atmosphere. (Pangborn heat treating methods are a result of years of research and development and our methods are unduplicated.) Next, Rotoblast shot is tempered in central axial flow convection furnaces to a hardness range which affords extended life and better cleaning. Lastly, it is sized and prepared to exacting customer specifications.

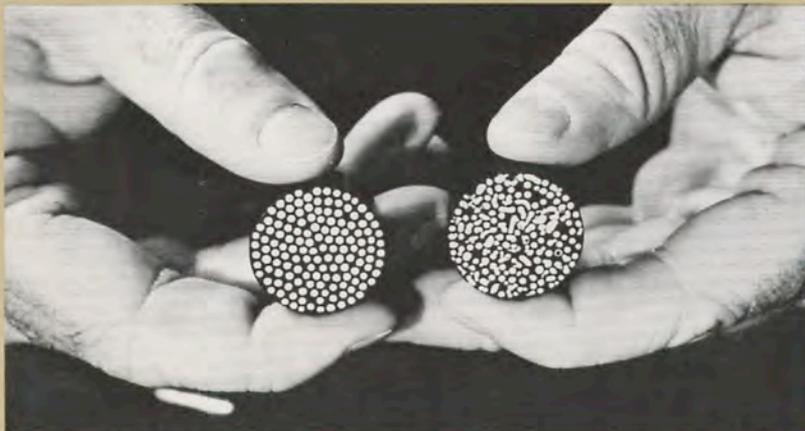
The point is, there's more to making Rotoblast premium steel shot than you might think. This additional care makes the difference.

We suggest simply that you compare Rotoblast Steel Abrasives with

any or all others. We do . . . continuously. Recently 25 separate hardness readings per sample tested showed our shot with a 4-6 Rc point spread. The others were 10 to 20 points spread. (And spread tells the story—not "average" hardness.)

Hardness is just one factor in the cleaning ability and wear life of an abrasive. Check our chemistry, microstructure and even the percentage of rounds vs. irregulars against all the others.

Everyone is busy these days . . . including people who make abrasives and people who buy abrasives. But we are never too busy to make Rotoblast Abrasives properly. We hope—in your own interest—you aren't too busy to evaluate your rate of return per ton of shot. It pays!

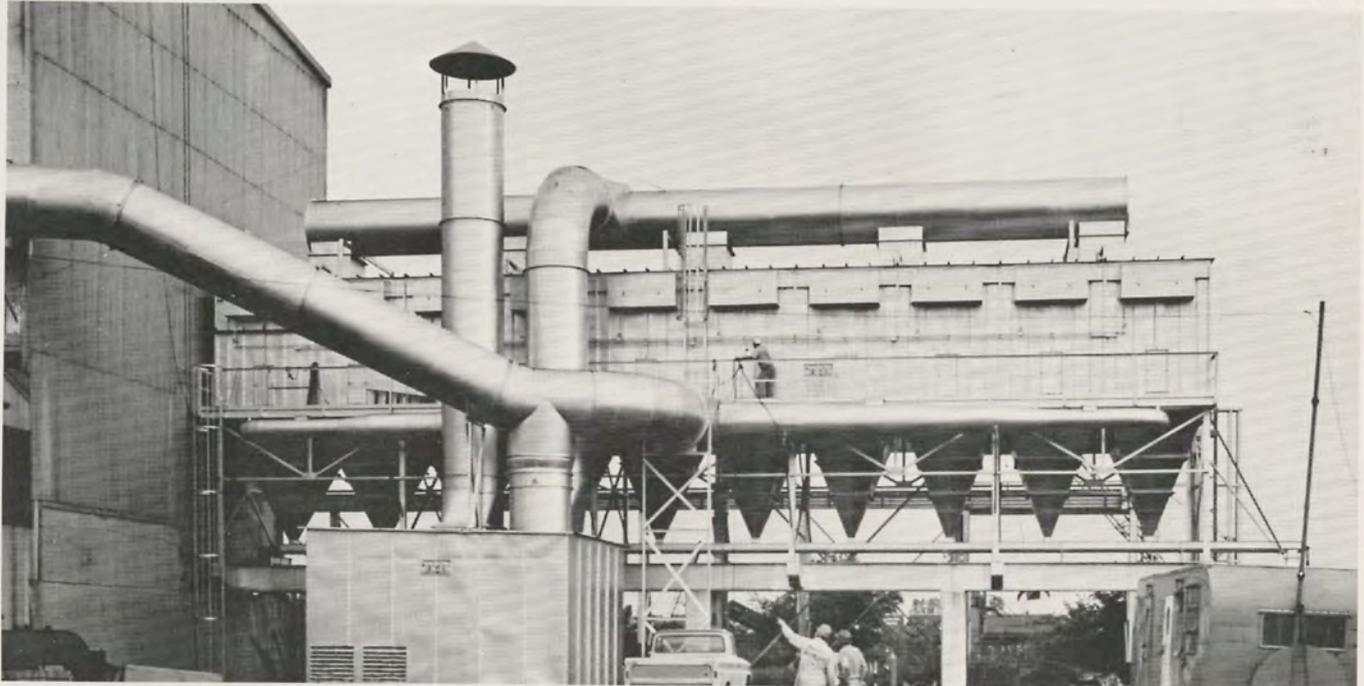


Random samples of Rotoblast Steel Shot (left) and a premium-priced, top-of-the-line competitive product were imbedded in these special bakelite plugs, then ground down to show a cross-section of the abrasive pellets. In this way you can see what you normally cannot see—the interior areas . . . and you will note the significant quality difference in these two leading brands.

Help your cupola kick the smoking habit...



BEFORE



AFTER

with Pangborn high temperature fume control

A high production cupola — charged a ton at a time and operated 16 hours a day — made a kingsize air pollution problem for a large midwestern foundry. But see the difference now.

Our message is simply this: if you have a cupola fume problem you'll find the best solution at Pangborn.

Pangborn has devices of every degree of sophistication and we can supply either the required equipment

or the total installation . . . with absolute assurance that the finished installation will meet your needs and the area's existing codes. We are prepared to offer engineering assistance, advice or proposals to anyone interested in cupola fume control.

Just send up a smoke signal . . . or write to
WALTER S. SCHAMEL, MANAGER
DUST CONTROL DEPARTMENT

Pangborn

a Carborundum company

ROTOBLAST®
CLEANING
SYSTEMS

VIBRATORY
FINISHING
SYSTEMS

DUST
CONTROL
SYSTEMS

ROTOBLAST
STEEL
ABRASIVES

