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TO: Carol Aarhus

FAX NUMBER: 456-6218

FROM: Leslye Arsht
-Whitney
401-3008

MESSAGE

Sheet #1 of 24

Tell Us What's Happening...

Give the AMERICA 2000 Newsletter an update of where you are in your community with regard to education reform and AMERICA 2000 — for example, programs or ideas that are tied to the National Education Goals or the strategy. Mail your updates to: U.S. Department of Education; Office of Public Affairs; Room 2089; 400 Maryland Ave., SW; Washington, DC 20202-0131; Attn: AMERICA 2000 Newsletter.

AMERICA 2000

NUMBER 17, WEEK OF JANUARY 20, 1992 U.S. DEPARTMENT OF EDUCATION

Three Cities, Three Approaches to Ed Reform

DETROIT 2000, METRO RICHMOND 2000 and SAN ANTONIO 2000 used different approaches in their education reform efforts which led to AMERICA 2000 initiatives to adopt the National Education Goals. Representatives from each community spoke of their experiences recently during a discussion centering on "Taking the First Step: Are the National Education Goals your Goals?" Following are excerpts from the discussion which included as moderator Ed Donley, chairman of the U.S. Chamber's Center for Workforce Preparation and Quality Education and chair of LEHIGH VALLEY 2000.

DETROIT 2000:

Let Parents Choose

Lawrence Patrick, president of the Detroit Board of Education

...[I]f we can [adopt the National Goals] in Detroit, you can do it...in your town....We had a terrible situation, not unlike the situations that exist in all major cities....

The first thing that we did was...[make] certain that everybody understood really how bad it was....We wouldn't let folks suggest — even for one moment — that

"We wouldn't let folks suggest — even for one moment — that the problem wasn't that bad, that it was temporary ...or to just add a little more money would fix it."

the problem wasn't that bad, that it was temporary...or to just add a little more money would fix it. We were not educating our children...our public school system was not working.

...[T]he second thing that we did was we went to every segment of the community once again and asked whether they would make a commitment that educating our children would be the number one priority in our town...[with the message]: "We're going to continue to have problems of unemployment, drug abuse, all of the problems, unless and until we educate our children."

...We then said, "Okay. Now we have to have some goals."...Decision-making would have to be moved to the local school....We'd have to rely on the good

See Detroit, next page

METRO RICHMOND 2000:

Get Your Story Out

Jeannie Baliles, chairperson for Virginia Literacy Foundation

... As a result of [court-ordered busing] there is still among some people...a residue of suspicion [in the Richmond area]...large numbers of people [had] left the public school system....METRO RICHMOND 2000 represents a unique opportunity because it is a time really of continual healing ....[A]mong the five superintendents who represent these jurisdictions, there is complete and total cooperation all the time....They meet frequently, but the public doesn't necessarily know that, and some of the old timers still are a little suspicious. "You're going to send my children across lines to another school? Is that what METRO RICHMOND 2000 is all about?" So you have to get your story out. The story of AMERICA 2000, of course, is a great story, but it doesn't matter

"The story of AMERICA 2000, of course, is a great story, but it doesn't matter how great it is if no one knows how great it is. That basically is the reason for having a kickoff in the first place...."

how great it is if no one knows how great it is. That basically is the reason for having a kickoff in the first place....

It quickly became apparent that we should take advantage of Lamar Alexander's expected visit in October

See Metro Richmond, next page

SAN ANTONIO 2000:

Build on What You've Got

Joseph Krier, president of the Greater San Antonio Chamber of Commerce

...I'm reminded of the song that Aretha Franklin sang...called "Reach Out." ...[If] you're considering [AMERICA 2000] for your community...remind yourself every day that you've got to reach out...further...to bring the people in your community together.

"...remind yourself every-day that you've got to reach out...further...to bring the people in your community together."

Our Chamber hosted a community retreat on the topic of "What is the Proper Role of Business in Support of Public Education?"...Out of that session, we decided...we needed a community-wide umbrella organization that would try to set goals with regard to literacy and dropouts; [would] deal with the myriad of non-profit organizations in our community...with regard to [who gets] funding for education; and [would] try to have an independent entity that would provide for accountability.

Over the next two years, we went to a number of entities to try to forge a partnership...there was a lot of resistance...with people saying, "Why do we need to do this? We're engaged in programs....Let's not rock the boat..." The business community wasn't satisfied...as we talked to parents, it was clear...they weren't....So we decided to try to find some partners who would help us.

See San Antonio, next page

Detroit, continued

principles of market forces to make certain that we would have quality education in Detroit....Once you have autonomy at the individual schools, you're going to have diversity....When you get competition, it's going to drive the quality up at every single school.... [P]arents in Detroit...came to believe that they have an absolute right to choose...and that really moved the locomotive down the track.

From...1988 and to the present...we set more specific goals...the percentage of students that would graduate from high school...[no] drugs and weapons in our classes, and our students would exceed the national average on test scores....

Every segment of the community stayed at the table....So when there was an opportunity to participate in AMERICA 2000, that was a piece of cake...all I had to do was make a phone call.... That was because we started early in building a relationship, building a coalition and making a commitment....

"If we don't all win together as a nation, then we're all going to lose."

DETROIT 2000 is going to provide an opportunity for all of us to come together — communities throughout this nation — to focus on accomplishing the same goals, and it means that I'll be able to share problems that I might encounter — as well as innovative solutions, and I'll be able to listen to your ideas....[I]t's not going to matter if we win in Detroit, if you lose in Iowa, Minnesota, Wisconsin, Florida, Tennessee. If we don't all win together as a nation, then we're all going to lose.

Metro Richmond, continued

[1991], as well as a renewed interest in education in the community, so we put together our steering committee....You reach out to everybody....Most importantly, you bring in people from the media. We have three commercial television stations...and we have one representative from each of those stations, as well as from the major radio station, newspaper.... And, here's the key — you need a good PR person. Get someone from the best advertising agency or public relations firm in your community to be a part of your steering committee.

Then as you plan your kickoff — you need a spokesperson....No matter how great your idea is, the press does not exist to write good things about your community. The press exists to try to find the conflict....Be prepared before your kickoff with answers to the tough questions. Choice....Budget woes....Don't just go in there with a good feeling that because what you're doing is great and wonderful, everybody else is going to see it that way. They're not....Have media on your side....

[After the kickoff]...you think the press is going to forget you? No. They're going to come back in a few weeks or months and say, "Okay. You had this big exciting announcement, now what are you going to do?" Don't let them down....Have another occasion...three to six months after your announcement....All you need is a lot of enthusiasm and a real tough skin.

Editor's Note: On January 22, three months after the kickoff, METRO RICHMOND 2000 held a public ceremony during which key community, business, government and education leaders signed a resolution to make sure "we can see positive [education] change by the year 2000."

San Antonio, continued

We went, in our case, to the City of San Antonio, to the County of Bexar, and to the University of Texas at San Antonio...and said, "If you will commit to put $25,000 a year into a pot for three years, we will do likewise, and with that $100,000 a year for three years, we will fund and staff an operation independent of this Chamber that will attempt to bring this umbrella group into realization."

"We are now engaged in reaching out even further...to form a community-wide advisory board..."

...[A]bout the time that happened, President Bush came out and announced his National Goals for Education. We met with our partners and said, "Boy, is this a great opportunity." ...We called up Washington and said, "We're with you, guys...."

That's what brought us to where we are today...a program that is funded, that has hired an executive director, that operates independently of our Chamber — and we thought that was very important because we find that there are some community groups, neighborhood organizations that are suspicious of Chambers of Commerce ...[W]e got the University of Texas to agree to contract out the staffing for our program.

We are now engaged in reaching out even further...to form a community-wide advisory board...that will help set policy for this group. We think if we will continue to reach out like that, we can guarantee that the support for this program will continue to be community-wide.

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MICHIGAN

Comment

McGriff: 'My No. 1 priority is the expansion of choice'

The Detroit News editorial board Wednesday interviewed Deborah McGriff, who on July 1 became the new superintendent of the Detroit Public Schools. The following are excerpts.

Q: What would be your one or two main priorities?

McGriff: It seems almost impossible that there could be a single person in the city of Detroit who didn't know my No. 1 priority is the expansion of empowered, chartered choice schools, and to make sure that decision-making becomes decentralized, down to schools, with parents, community, teachers and administrators collaborating in the development of schools. And it is also my expectation, although we don't talk very much about it, to include students in that process. I think students have to be empowered and they have to have a sense of school service or community service and being heard in schools so that they bond to those buildings and feel that there are places that are responsive to them.

Q: As you come to Detroit from Milwaukee, is the Detroit school system as bad as everybody says it is?

A: I don't look at urban school systems as bad as everybody describes them to be because all urban school systems have needs. People can't wish for the school system of the '50s or the students of the '50s because that's not the reality of today's world.

Q: But how would you rate Detroit [illegible] with other urban systems?

A: At this point, given the information I have, I wouldn't say that it is worse than other urban school districts. Maybe Detroit was unique at one point of being an urban school district with financial problems, but as you look across the country now, everybody's cutting back to try to balance their budgets, and so that doesn't even make Detroit unique. I think Detroit might have experienced some of the problems earlier than some other school systems, but as you follow the trends, the same things are happening in other places.

Q: The Bush administration has been making a big push for national testing of students. How do you feel about that?

A: I'm a firm believer that testing can drive curriculum and that testing can drive instructional strategies, and so I'm somewhat cautious until I see the type of test we're going to develop to measure student performance. If the tests are going to be mostly low-level, multiple-choice tests, then I'm going to be very concerned about that because I would like to see education in general, Detroit specifically, to move more toward authentic testing. If you expect young people to be able to speak, you don't give them a multiple-choice test on language arts and language skills. You ask them to make a speech.

Q: Since most of the standardized tests used in Detroit Public Schools are multiple choice, does that mean then that you would support an overhaul of the way tests are given in the Detroit school system?

Q: Do you believe more money is the key solution to what ails Detroit's schools?

A: I think it's one of the solutions. I do think as educators we have to become more efficient with the money that we currently have, and I plan to do that.

Q: Do you see any areas where you can improve on efficiencies in staff and programs?

A: Yes. One thing we will be doing next year is being much more aggressive in trying to secure discretionary funding and applying for competitive grants that are available at either the state or federal level, through private sector or through foundations.

Q: Do you mean for experimental teaching methods and the like?

A: For any activity that supports the goals of the board. I think our goals are broad enough, and there are a number of organizations and institutions that want to support the kinds of things that we're doing, and we need to be more aggressive in securing additional money.

Q: There's been a great deal of talk about educational finance reform in Michigan, like other states. What do you think needs to be done here?

A: I definitely do support equity in funding, and I do realize that urban school districts that have youngsters with higher needs, that equity can't mean the same for everybody. And the same amount of money in a school district where children come prepared to learn with a number of [illegible] experiences will not get

Q: Do you believe a millage increase is necessary?

A: I don't think that that's a decision that the superintendent makes independently of the school board, and we haven't met yet to begin discussions on how we want to proceed with the millage.

Q: As I recall, the school system will end this fiscal year with something like a $33 million surplus.

A: Yes, it's been stated that we have a $33 million surplus, but in my few days on the job, one of the things that I realize is that we have a number of positions that have not been filled. It's interesting that an organization that says empowerment is its major initiative does not have a staff person who is responsible for the development and facilitation of empowerment in the school system.

Q: Are you suggesting then that the $33 million surplus on paper is very deceiving?

A: I think anybody in the Detroit Public Schools will tell you if you look at the condition of the school buildings in terms of the repairs that need to be done, and we are looking at a list of renovations and repairs for the summer, if you look at the level at which we have social workers or guidance counselors or reading teachers, $33 million won't even put a dent in the list of needs that people will identify for you to respond to.

Q: How about giving us a sneak preview, let us say, in the area of choice, as to what you will do to move that forward?

A: What I've discovered is that

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down. They're developed from the bottom up. For example, the success we've had with the male academies; to me, they're choice schools because they have a theme and people are choosing to come there and they're being empowered. That's what's going to make them work.

Q: I'm not quite clear on your position on choice. To me, that means giving parents a choice of which public schools to send their children to. Is that what it means to you?

A: It means that with some restrictions. You can't have unlimited choice because, first of all, for most of the schools that are choice schools and even the male academies, you have more people wanting in to schools than you have schools. So that means that some people are not going to get the choice that they wanted in those schools. Some people have criticized Dr. Porter's notion of assessing the number of people who are in neighborhood schools who are there and are happy that they're there. I think that's a form of choice. Not everybody wants to go to a citywide school. I think that parents ought to have a right to say where they want their children to attend school.

Q: On the subject of male academies, the local chapter of the National Organization for Women has criticized the concept as illegal segregation. How do you respond?

A: We're continuing to have conversations with NOW at the local and national level, and we hope that we'll be able to reach a point of agreement where they can understand that we're trying to put together a program that responds to educational needs, and hopefully we'll get to that point.

Q: On the subject of multicultural education, do you think current curricula and textbooks tend to be racist?

A: ... you don't want to use the term racist, you can definitely say they don't tell the truth and they exclude the contributions of a large percentage of people, including women and including most people of color. I think the board has taken a wise position in insisting publishers work with us, especially in urban school districts, to develop texts that are multicultural and Afrocentric. If we look at forecasts for the next century, and given the increased population of people of color and the increase in diversity of work groups, everybody's gonna have to know how to work with people who are different from them. And so if you only have a Eurocentric curriculum in the suburbs, where are you going to learn about other cultures and how to interact with other people?

Q: But would that kind of diverse population respond well to an Afrocentric school curriculum?

A: The term Afrocentric — I think we're going to have to spend a lot of time with that, too. Because some people think that Afrocentric means that all you study is the contributions of Africans and African-Americans. But I don't think that that's true.

Q: As I understand it, that's what Afrocentric is — that everything springs from African culture.

A: This is one where there is a broad range of interpretations. It does say that a great deal of our civilization originates in Africa and that everybody in this country needs to know that. And it says that you also include content that is African or African-American and that you use instructional strategies that are effective with African-American children. It is not enough just to include the contributions of African-Americans or the names of African-Americans. African-Americans had a perspective as things happened to them, and their perspective of events will be very different from the Euro-



MICHAEL S. GRIMM/The Detroit News

School Superintendent Deborah McGriff

Q: There seems to be an element to the Afrocentric or multicultural ideal which is aimed not just at increasing the visibility of the contributions of other cultures but which is very hostile to the European heritage — which is still the dominant heritage in the country and hostile to middle-class values. Could you comment on that?

A: I don't doubt that there are people in the city who believe what you

"If you expect young people to be able to speak, you don't give them a multiple-choice test on language arts and language skills. You ask them to make a speech."

not to be my position. To me, multicultural covers an appreciation for all people and both genders and of people across socio-economic backgrounds.

Q: Former Supt. Porter at one point introduced the notion of intervention teams when schools did not meet standards after they were provided support and the fact that they would be taken over by the district. Do you see yourself moving in that direction?

A: I think what I would like to do first is try it from the more positive, humanistic approach, to say to schools you have the opportunity to become empowered and take responsibility for your own fate. And if they don't, then I'll have to sit down with the board and we'll have to discuss what do we do when this doesn't work or when people are not responsive to this opportunity. I've had the opportunity to be the head person on an intervention team to transform a school. I've already done that. And I've worked in places where we simply said, "Hey, it's the wrong mix. Close it down, start all over again."

Q: Dr. Porter supported the concept of establishing minimum competency standards for admission to high schools to deal with the still-chronic problem of social promotion. What is Deborah McGriff's view on that?

A: I'm convinced that kids ... need to enter any grade with the prerequisite skills necessary to be successful. But the issue is whether or not you're going to focus your energy on preparing kids the first time around, or are you going to focus your energy on correcting your mistakes once children have failed for eight years. And so I'm just not at this moment ready to say what I want to do about that because there are a lot of competing philosophical ideas and competing research in that area. ... I would never do it without saying I have created some educational environments that would provide these children with the opportunity to meet the skills they need to get into school, which also means that it can't be a traditional school.

Q: I forgot to say the other side of his notion was that there would be a safety net of alternative programs ...

A: You can spend your whole $33 million on that. The other part of that that bothers me is I'm really concerned about any proposal that says the school system as it currently exists is fine. So we're going to keep all the money going to the existing high school system the way it is and we're going to fix up some kids. I don't think the existing high school system needs to operate the way it does. Until you do something to also change that so that we can meet the needs of the children that enter those programs, you're going to have a problem.

Q: If the Legislature and Gov. Engler could do just one thing for you, like eliminate a regulation at the state level, what would you like that to be?

A: I don't know the state regs, so I guess the only thing I could ask the governor to do is keep education at the top of his list and then we can work on the specifics.

Q: You're a parent. What would be your advice to Detroit parents who are concerned about the education their children will get?

A: My advice would be to visit your schools, to stay involved with your children's education and to know that there are people in this system, including the board and the superintendent, who care about your children. And if you can't find people at other levels to communicate with, communicate with us.

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Detroit Free Press 11/15/91 p. 13

(Best available copy.)

America's schools: Translating goals into reality in the classroom

U.S. Education Secretary Lamar Alexander and Michigan Gov. John Engler were in Detroit this week to announce that the city and state were taking on the challenge of America 2000, President George Bush's national education goals. The following is an edited transcript of their meeting with the Free Press editorial board.



EDUCATION
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Mission *Tell us what it is you are trying to accomplish here today.*

Alexander: Well, maybe the governor and I each have a version of that. Mine's very simple: Detroit becomes the largest American city to accept the president's America 2000 challenge, to try to reach the six education goals that the president and all of the governors agreed upon a couple of years ago. Detroit is impressive because it seems to have a willingness, of all of the big cities in America, to break the mold, to do things differently, to take some risks on behalf of children.

I don't know of a big-city school system that is headed better in the right direction. I'm not saying that it's there, or that it is going to be easy to get there; I don't want to overstate it. But I'm impressed by what the school board, the superintendent and the governor are doing, when they talk about chartered schools, giving parents their choice of schools, setting standards and focusing on at-risk children. That's unusual because a lot of what goes on is business as usual.

Governor, do you want to offer your perspective?

Engler: The secretary has been just a breath of fresh air at the Department of Education. His leadership has reinvigorated the department. He has recruited, I think, the finest team I have ever seen. ... We are one of 21 states that have taken this on in a very public way. (Tuesday) I announced the Michigan 2000 committee, which is a cross section of leaders. ... Everybody is at the table. The legislative leadership is part of it. The teachers union has a part of it. The Business Roundtable, (A. Alfred) Taubman's new Partners in Education, (the) Detroit Compact. (We've) got everybody who is a player now at one table. We have tremendous energy in the state. This is an operational group. We are not going to write a report. We're designed to try to implement much of the content of reports that have already been written.

Reaching goals: *What is the connection between goals and what happens in the classroom?*

Alexander: That goes to the point. In the 1980s, suddenly it dawned on us that education might be important in a different way than we thought. We are trying to sort through what was happening — world competition, America's primacy challenged, problems in the cities, all of these things. And education sort of keeps bubbling up. In the 1980s, we were sort of thrashing around.

By the '90s, I think we had almost backed into where we should have started, which was: You have to have goals. So, step one is the six National Education Goals. We've never had national education goals in America before. They could have fallen flat on their face, but all of the education groups have endorsed them. So then the question is, what do you do about those? Well, the logical progression is you define what you mean. If you want to say world-class standard in math, you have to define what is a world-class standard in math for a Detroit kid in the fourth grade. The math teachers are doing that. You do the same in English. Then you create the new curricula. Then you retrain the teachers. Then what do you do? You come to the conclusion that while the president could lead and even the governor can lead, in the end, it is up to people in their own hometowns.

America 2000 is a strategy to help move America, community by community, toward the six goals. ... The president is advocating other transforming ideas that communities may or may not want to adopt: the idea of giving parents a choice of schools, the idea of a national achievement test, the idea of a new generation of American schools.

Our plan is to help fund the first 20 in Michigan, with a million dollars each. So, that's where this committee

MORE...

(2)

"In the end, it is up to people in their own hometowns."

(Detroit 2000) comes in. . . . It's an attempt to inspire a movement. There are now 21 states whose governors are involved; 31 who have said they will be. And there are more than 1,000 cities and communities (that) have basically said (they) will work within this framework to do what we think needs to be done. Detroit becomes the largest city of them all, although not the only big city — Omaha has; San Antonio, (too).

Extra resources: *Governor, do you have any thoughts on how a community like this one and its schools should respond to the loss of resources that are an adjunct to the classroom, like the Detroit Science Center?*

Engler: Well, you know they are spending — the Detroit Public Schools budget is over a billion dollars. Anything could be an impact.

What about the community in a broader sense, since the Science Center served a larger group of people than just the Detroit Public Schools?

Engler: There is potentially some impact, certainly. Two hundred thousand persons visited that last year. I know the attendance was about half what it had been in prior years, so there has been some decline. I don't know what caused that exactly. . . . Is it decisive? Probably not as important — as the students themselves were saying over at Cass Tech — they suggested science equipment in the labs that they could use all day, every day.

Teach what?: *Would you both like to see more standardized curriculum in schools? Would you like to see children in Jackson learning essentially the same kind of concepts as the children in Detroit or Lapeer?*

Alexander: I can give you a short answer from the national perspective: We like national goals. We think, therefore, there must be national standards in math, science, English, history, geography. We don't think there should be a national curriculum. We think teachers should be free to develop different ways to help children reach these standards. We are for a voluntary examination system, but we think there should be more than one. We would hope all Detroit children would learn math to the same world-class standard all Memphis children would, all Richmond children would. But what the curriculum is, and how they learn it, is up to the teacher and the local school board and the state.

At the state level, do you think there is any need to move toward a more definitive approach to curriculum?

Engler: We said there ought to be a core curriculum. We've said that, and we have charged our Board of Education (with developing) a core curriculum. But we have stopped short of (imposing it) on every school district. We've said they have to meet these objectives, but they are free to do what they wish.

On the testing point, I think the question is: How do we know? One of our great problems — and you carried the survey over the weekend (that showed) 72 percent of the parents, at least outside of Detroit, said: "Hey, our schools are fine." The fact is that our top 5 percent are equal in performance in science and math (to) the Asian (top) 50 percent. So, clearly, things aren't fine. I think we are competitive enough if we say this is the context of world-class; this is the body of knowledge. And that may lead to some conclusions.

The secretary mentioned the response to year-around schooling. We haven't taken a position to mandate that, but we've said it may be simply impossible or very hard to learn as much in 180 days as in 240 days. How do we make that up? The universities in Michigan have done something else that is unique. They've said that they want a certain level of performance coming into the universities. One of the reasons, and we have been pushing on this, is to get the remedial education cost out of our universities and redirect that into other university programs, not doing what the high school should have done.

Alexander: Going back, we are not advocating more testing. We are advocating different and better testing. And we are not advocating standardized testing, either. We wouldn't expect the national examination system to be multiple-choice.

Funding: *I recently read a report from the Congressional Black Caucus that made the point that before there is a national test measurement, every student ought to have world-class schools. It pointed out the differences in funding between suburban schools and inner-city schools like Detroit. How do you respond to that? What do you think needs to be done to ensure that all students get world-class educations?*

Alexander: The states are struggling with that right now. If we did a general redistribution of funding in the United States, it would mainly go from the big cities to the less-funded rural districts. We would be going out of Detroit, out of Washington, D.C., New York City, to communities like where I grew up, which spend a lot less on education. The difference is (that) the community where I grew up has the highest achievement scores in the state. So it is not the school and the amount of money spent on the school that necessarily make a difference. It has to do with community attitudes, family attitudes and many other things.

MORE . . .

America's Schools con't (3)

We don't want to be insensitive to the fact that some kids need a lot more help than others. But it doesn't necessarily mean spending money on the school they go to. It may mean instead making sure that they get a lot of other help outside the school — that they get fed, that they get loved, that somebody is home with them at night, that somebody turns off the television, somebody is interested in them from the day they were born. Those are social services.

As I go around the country, I find a number of examples of people who would like to have more money. But in Decatur, Ga., for example, they have (a) school district where people were trying to get the kids out eight years ago, and now they are trying to get them in, because they basically just mobilized the community. They found all sorts of social services that weren't plugged into kids. They have opened the schools in the afternoon, got everybody involved, (set) very tough standards. Then they marshaled the Boy Scouts and the local foundation, the health services and the federal government agencies — everybody with any money, any ability to help . . .

Mr. Secretary, have you had a chance to read Jonathan Kozol's new book ("Savage Inequalities: Children in America's Schools")?

Alexander: (I) have not.

Basically, he makes the point that funding inequities in education today have not only essentially repealed Brown vs. Board of Education (1954), but in fact they have taken us back before Plessy vs. Ferguson (1896), and it is a situation now where schools are not only separate, but they are also very unequal. I think anyone reading that book would find it hard to come away with any other conclusion than money does make a difference; in fact, it makes the crucial difference. Did he just get it wrong?

Alexander: Well, do you think taking money out of Detroit and putting it in a rural Michigan town would be the right thing to do?

The point was made, and I guess I would agree that districts such as Detroit have greater needs.

Alexander: (The) children do. The school can educate. But the school can't raise the child. The school can't make sure a child is born without drugs inside the child. The school can't provide a pediatrician. You can't dump on teachers everything a family is supposed to do.

Social services: *What other agencies are supposed to do it? Additional money is not going into social services.*

Alexander: See, everybody is sitting around complaining because somebody else isn't raising their children. When somebody takes responsibility for the child they bring into the world, for the child they are supposed to love and care for, that child will then be in a position to learn. And the schools can be improved to help educate the child. Until that happens, we won't succeed. I'm sure there are inequities in America, and that they are severe and that some of them depend on funding. But, you know, the highest level of funding in the country is in the Washington, D.C., school system.

Is that a question of poor administration?

Alexander: No, I think it is partly because of the school. About half of the problems are in the school. About half are outside the school. And you have to care about both of them to make any real progress. You have to have high standards, you have to have high expectations from children to learn, efficient schools, spend everything wisely. But then outside the school, you have to care for the children. And if the families aren't, they need to be mobilized. And if they are not mobilized, then the community has to mobilize them.

It's the toughest challenge we have in this country. And it is tougher in the big cities than it is anywhere else. But it can be done.

If the parents can't or won't do it, and if someone else has to do it, won't it take a major infusion of money?

Alexander: There are parents all over the country who must do it. And they are not all poor. I mean, the average amount of time that a parent spends talking to a child in the United States today is 15 minutes. No government program is going to substitute for that. What are you going to do in San Diego County, when they have two classrooms a week of babies that are born with drugs inside of them? What program is going to solve that problem after it has happened?

What are you going to do to the children born to mothers who didn't want them in the first place?

Alexander: What am I going to do?

What possible way is there to address that problem in the scenario you are describing?

Alexander: I think that men and women ought not to bring a child into the world unless they are prepared to prepare that child for life.

More.....

America's Schools con't (4)

Washington's role: *One of the differences in the cost between, say, Washington, D.C., and a rural area is cost of living. Apart from that and apart from the sorts of things that you were talking about that are around the children in the communities in which they live, what in the schools do you think we ought to be spending more money on? What part of that should be federal money?*

Alexander: I think (that) what we should do in schools is start over. While we are fixing the schools we have, I think we ought begin to pick up the idea that Gov. Engler has suggested with the charter schools, because it gives educators a chance to look at today's children.

If they say the best thing to do is create a kindergarten in a bank and grades 4-6 at the manufacturing plant, and call those public schools, and have them open 24 hours a day and all summer, then we ought to do that. That is the first thing I would do — is start over. Because I think it is just easier to say: Here are the kids; what are their needs, what are our goals? What do you need to do? Then you can spend the money on whatever the teachers from that school — what plan they have — to reach those goals.

The federal government's role is, so far, limited to innovation, research, helping those with disabilities, helping those who are disadvantaged. Chapter I (of a federal education law) is an example of that. The president's role is to lead a movement, to challenge people to challenge their education systems, to upset them and to transform them — to create a climate for change and then investment that supports that change.

National Goals:

By the year 2000:

1. All children in America will start school ready to learn.

2. The high school graduation rate will increase to 90 percent.

3. American students will leave grades four, eight and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, history and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning and productive employment in our modern economy.

4. U.S. students will be first in the world in science and mathematics achievement.

5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

6. Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

(3)

DETROIT NEWS Nov 12, 1991

City schools adopt goals set by Bush

By Ron Russell
THE DETROIT NEWS

The Detroit school system is the first major U.S. urban district to adopt President George Bush's education reform goals, pledging a dramatic reduction in the dropout rate and other gains by the year 2000, district officials said Monday.

The district's high school graduation rate would have to increase to 90 percent — up from the current 60 percent — to reach Bush's goal.

Detroit also plans at least two one-of-a-kind schools and would support a new voluntary national competency test in English, math, science, history and geography for fourth-, eighth- and 12th-graders.

"We are not going to duck any test on which our students compete with children on the other side of the state, the country or the world," said school board President Lawrence C. Patrick Jr.

"If given a fair chance to learn, our students can compete with anybody."

Under Bush's "America 2000" education reform agenda, also endorsed by the nation's governors, Detroit must compete with other districts for one-time grants of $1 million each to help plan the new innovative schools.

That amount would be earmarked for each congressional district in the country, but so far the funding has not been approved.

At least 535 model "New Americans Schools" would be created around the country by 1996.

"There are no guarantees," Patrick said, "but we put ourselves in a pretty good position to receive funding by being the first big-city district in America to adopt the president's goals."

Please see Reforms, 4A

Detroit's intentions

- Dramatically expand "empowered schools" where principals, teachers and parents make most decisions.
- Promote greater parental choice by increasing the number of schools with distinctive philosophies open to city-wide enrollment.
- Require all schools to improve annually their "best" performance on standardized achievement tests.
- Provide job and scholarship incentives for students who have good grades and attendance through the Detroit Compact.
- Expand pre-school classes for at-risk children.

APR-07-1992 14:48 FROM TO 9456218 P.12
JU 12 '91 15:35 FROM S.E.GOVERNOR'S OFFICE PAGE.006

(4)

Reforms: Detroit schools adopt Bush agenda

from page 1A

U.S. Education Secretary Lamar Alexander and Gov. John Engler are to unveil the district's participation in the plan, dubbed Detroit 2000, at Cass Technical High School on Wednesday. The national and state efforts rely on local initiatives to spark an overhaul of troubled public schools.

"We will be part of a network of people who are struggling to create schools for tomorrow so we don't have to reinvent the wheel," Supt. Deborah McGriff said Monday. "Schools have been designed for students to drop out because they don't respond to their needs."

Several community leaders applauded the district's intentions, but questioned how Detroit children will benefit without significantly increased state and federal spending on education.

"This is nothing but a ploy to use the school system and the city for Bush's political agenda for next year," said Helen Moore, of Black Parents for Quality Education.

"This is a disgrace and Larry Patrick ought to be ashamed of himself."

Said N. Charles Anderson, president of the Detroit Urban League: "The president suggests people develop programs that cost money, but he does not propose any new resources to pay for them."

Patrick, a Republican, said Bush's plan calls for changes already under way and links with academic goals already approved in the 167,000-student Detroit district.

Among his six national education goals, Bush also stresses expanded preschool programs, drug- and violence-free schools, and a pledge to make U.S. students the world's best in math and science achievement.

Patrick said the district also hopes to benefit from technical assistance through the proposed nonprofit New American Schools Development Corp., which would be funded by businesses and private foundations. It would assemble experts to help in designing new schools and select districts where their ideas may be tested.

Governors are to approve funding proposals submitted by districts after consulting with the U.S. Department of Education.

John Truscott, Engler's press secretary, said Detroit is a logical place to start such an initiative.

"It has so much to gain," Truscott said, "and the school board and superintendent have already demonstrated the mind-set behind both the governor's and the president's education reform plans."

DRAFT

DETROIT CITY PROFILE

Total Population: 4,665,236 (Census Bureau, 1990)

Percent Minority Population: 76.5% (Census Bureau, 1990)

ELEMENTARY AND SECONDARY SCHOOLS

Enrollment

Number of Public Schools: 259 (NCES, 1990)

Public School Enrollment: 180,543 (NCES, 1989)

Enrollment by Type of School: (NCES, 1989)

Regular:	176,877
Special education:	2,380
Vocational education:	259
Other and alternative:	1,027

Racial Composition: 91.6% minority (NCES, 1989)

White:	8.4
Black:	88.2
Asian:	0.7
Nat.Am.:	0.3
Hispanic:	2.3

Number of Teachers: 9,631 (NCES, 1989)

Private School Enrollment: 61,177 (Market Data Retrieval, 1990 projection)

Funding

Total Funding: $803,775,000 (Census, 1989)

Federal:	$ 77,576,000
State:	461,086,000
Local:	265,113,000

Total Expenditures: $817,466,000 (Census, 1989)

Instruction:	$437,658,000
Support services:	300,871,000
Other:	46,944,000
Interest on debt:	10,635,000
Capital outlay:	20,868,000
Intergovernmental:	490,000

Per-Pupil Expenditure: $4,326.93 (Census, 1989)

Attendance and Graduation Rate

Attendance: 91% in fall 1990, compared with 80% in fall 1989. (SRR, February 1991)

Graduation Rate: 60%. Although Michigan has no graduation requirements, there are financial incentive programs for districts that meet specified graduation standards.

Choice

Local Options: no information
Open Enrollment: yes (impending by State law enacted 1991)
Postsecondary Options: no
Program Development: no information
Specialty Schools (magnet): yes
Tax Deduction or Credit: no
Tuitioning: no information
Tuitioning for handicapped students: no information

(Source: OIIA/Center for Choice in Education)

Awards

Cass Technical High School, Principal David Snead, a school for academically gifted students. Enrolls 3,400 students, 99% black, grades 9-12, with 20 technical and vocational curricula, all of which are college preparatory. Recognized as an exemplary school by the state of Michigan and ED. (Executive Educator, February 1992)

o Federal or Non Federal Awards or Citations for excellence

Recipient	Public/Private	From	Reason
Cass Tech. High School	Public	ED	Blue Ribbon (cf. above) (1990-91)
Lutheran H.S. West	Private	ED	Blue Ribbon (1986-87)
Brooks Middle School	Public	ED	Blue Ribbon (1984-85)

Number of schools receiving PAFA awards (ED, 1990-91)

Public schools		Private schools	
Elementary	58	Elementary	18
Middle	13	Middle	2
High	8	High	6
Total	79	Total	26

Performance Indicators

Test Scores

During the 1990-91 school year, the percentage of students who scored at or above grade level increased: in reading, from 40% to 43%; in math, from 42% to 45%. (SRR report, July 1991)

From 1980 to 1987, "impressive gains" were made on the California Achievement Tests and the Michigan Educational Assessment Program, in reading and in math at grades 4, 7, and 10. (CGCS, fall 1990)

Dropout rate

During the 1990-91 school year, the dropout rate decreased, from 39% to 37%. (SRR report, July 1991)

Business/Community Involvement

Detroit Compact: A business school partnership, established in 1990. Under the compact, high schools and middle schools pledged to improve their tests scores, attendance, and curriculum in exchange for summer jobs and needs-based college scholarships for qualified students. After the first year, an independent study found improvement in attendance and discipline, but called for a better data-gathering system. In 1991, the compact involved 2,700 students, with 23% meeting the compact's standards. The program hopes to include all Detroit's public schools by 2000. (Education Week, 2/6/91)

KEY PEOPLE AND ORGANIZATIONS

Detroit Mayor: Coleman Young (313) 224-3400

Detroit Superintendent of Schools: Deborah McGriff, as of 7/1/91. Previously she was deputy superintendent of the Milwaukee (Wis.) Public Schools for 2 years. She replaced John Porter, who held the position for 2 years. McGriff wants to open principals' jobs to private sector managers. (SRR, January 1992)

School Board President: Frank Hayden, replacing Lawrence Patrick. He supports a multicultural curriculum, the all-male school, and site-based management. (SRR, January 1992) (313) 494-1270

RECENT ISSUES AND DEVELOPMENTS (State and city)

Major Reform Developments

Statewide

Michigan 1990 legislation requires all public schools to develop and adopt 3- to 5-year school improvement plans that could include teacher incentives. Schools are also required to report to the public annually on the status of the school, adopt a core curriculum as a means of raising academic standards and improving school accountability, and become accredited by the State Board of Education. To support this effort in 1991-92, the Legislature appropriated $2.4 million. Also, $25 per pupil is available through the finance formula for extra assistance to less wealthy districts implementing the law's requirements.

Funds totaling $2 million are available for the 2nd year of pilot projects designed to improve outcomes for all students through restructuring the organization, roles, and relationships of the school. In 1989-90, the funds supported 41 pilot projects. (SREB Clearinghouse, January 1992)

Detroit

- All-male black schools: The Detroit Board of Education was embroiled in a controversial lawsuit this summer with the American Civil Liberties Union and the National Organization for Women Legal Defense Fund when it tried to open 3 all-male academies targeted toward black inner-city males. A U.S. District Court judge blocked the schools' openings in August and ordered the board to actively recruit girls. The Board of Education opened up 136 places for girls in the special schools, but only 29 applied in the first half of September. The academies opened August 28 with about 560 boys and 3 girls. The district is planning to open a similar academy for girls by next year. State Rep. Hansen Clarke said in September that he planned to introduce 2 bills, one to amend the state school code prohibiting sex-segregated schools and the other to amend the 100-year-old anti-discrimination Elliott-Larsen Civil Rights Act. (Multiple news sources, 9/19/91)

- Charter schools: Detroit "policymakers" are continuing to explore the option of creating a charter-schools provision that would allow some private schools to become public; and are pursuing a plan to enable 12 existing public schools to sign a contract with the school board that would enable them to take control of their own budgets, programs, and governance structure. (Education Week, 1/15/92)

- Managers as principals: Applicants have been responding to Supt. McGriff's proposal to allow candidates with 3 years' experience as managers in business, community, or civic organizations to apply for principal's positions. Prospective principals would have to obtain a waiver from the Michigan Board of Education before they could be hired. Administrator's groups have condemned the proposal, saying the a principal needs to have a good background in curriculum and supervision. (Education Week, 2/12/92)

Miscellaneous Programs of Note in Detroit

- Cornerstone Schools: Three interfaith private schools, together called the Cornerstone Schools, opened in August 1991 with 170 students. Believed to be the first such interdenominational system with both Catholic and Protestant backing, the schools are designed to provide year-round classes to urban black youth and to emphasize academics, discipline, a strong moral base, and educational opportunities for parents. (Education Week, 9/4/91)

- Wayne State University Partnership: The University is considering a plan to take over administration of five Detroit public schools located near the campus and serving about 3,600 students. The University would use its staff to improve education and will focus on early childhood programs, but would involve school administrators, faculty, and parents in decisions. Former School Board President Patrick favored the idea. (EdLine, 9/5/91)

- TEAMS: Telecommunications Education for Advances in Mathematics and Science (TEAMS) broadcasts over local community access channels in Detroit (as well as Los Angeles, Boston, and Washington, D.C.) under a $3.5-million federal grant to deliver math and science instruction to limited-English speaking and urban students. (SRR, 9/3/91)

- Eastside and Westside Development Centers: These are alternatives schools for about 230 poor-performance students in grades 6-8. These students scored better and had better attendance and aptitude tests than comparable non-transfer students. (CGCS, fall 1990)

- Chapter 1 Preschool Program: A longitudinal study from the 1973-74 preschool (4-year-old) class showed that in 1986-87, the preschool children outperformed the control group in math, reading, and conduct, with 54% graduating on time as against 14% for the control group. (CGCS, fall 1990)

MICHIGAN STATE PROFILE

GENERAL INFORMATION

Population: 9,295,297 (1990).

Size: 58,527 square miles.

Capital: Lansing.

Major Cities: Detroit, Grand Rapids, Warren, Flint, Lansing, Sterling Heights, and Ann Arbor.

Per capita income: $17,444 in 1989, against a national average of $17,596.

KEY PERSONNEL

Governor: John Engler (R), term ending 1995.

U.S. Senators: Donald W. Riegle, Jr. (D), term ending 1995; and Carl Levin (D), term ending 1997.

Chief State School Officer: Superintendent Robert Schiller.

Primary higher education official: No single official.

Superintendents of large school districts: Detroit, Deborah McGriff; Grand Rapids, Patrick Sandro; Flint, Dr. Nathel Burtley; Lansing, Richard J. Halik.

Secretary's Regional Representative: Region V, Brian E. Carey, (315) 353-5215.

GOVERNANCE OF EDUCATION

Elementary and secondary education: State Board of Education, 8 members elected in a non-partisan statewide election for staggered 8-year terms.

Chief State School Officer: Superintendent of Instruction, appointed by the State Board for a contract term determined by the Board. The Legislature establishes the salary.

Higher education: The State Board of Education provides direction and leadership, but cannot supervise. A Community College Advisory Board advises the State Board of Education. Individual boards of trustees govern State-supported colleges and universities.

PUBLIC ELEMENTARY AND SECONDARY EDUCATION

FUNDING

Source of funds: Federal, 5.7%; State, 27.2%; local, 67.0% (1988-89).

Expenditures per pupil: $5,116 in 1989, against a national average of $4,606.

SCHOOLS

Number of public schools: 3,314 in 1990.

Number of local school districts: 561 in 1990, of which 30.8% have fewer than 1,000 students.

Graduation requirements: No State requirements, but there are financial incentive programs for districts that meet specified graduation requirements.

STUDENTS

Compulsory attendance years: 6 to 16.

Total enrollment, K-12: 1,577,000 in fall 1990.

Length of school year: 180 days in 1990.

1990 NAEP 8th-grade math assessment: Level: 264; Rank: 16. Level 300 denotes the ability to reason and solve problems that involve fractions, decimals, percents, elementary geometry, and simple algebra.

Change in school-age population, fall 1984 to 1989: -1.4%, against a national average of -0.7%.

High school dropout rate: 26.4% in 1988, against a national average of 28.9%.

Number of 1991-92 high school graduates: 102,695.

High school graduation rate: 70.7% in 1989, against a national average of 74.1%.

Page 3 - MICHIGAN

Average SAT score: 18.6 in 1989, against a national average of 18.6.

TEACHERS

Pupil-teacher ratio: 19.7 in 1990, against a national average of 16.9.

Average teacher salary: $36,427 in 1990, against a national average of $29,773.

HIGHER EDUCATION

Enrollment in higher education institutions: 560,320 in 1989.

Number of higher education institutions: 97 in fall 1989.

State appropriations for higher education: $1,541,648,000 in 1991-92. Rank (5).

Revised 1/92

To: Carolynn Reid-Wallace

From: Vada Hill

Date: March 26, 1992

Subject: Detroit 2000 Stering Committee

Per your request, listed below are the names/titles of the members of the Detroit 2000 steering committee as of late 1991.

Name	Title
Don Petersen	CEO (ret.) - Ford
William Pickard	black small business owner
Bernard Parker (D)	Director - Operation Get Down; Wayne County Commissioner
Hansen Clarke (D)	state legislator (introduced legislation allowing male/female academies)
Larry Patrick	Detroit school board member; Chair: Detroit 2000 Committee
Frank Hayden	Detroit school board president
David Olmsted	Detroit school board member
Joe Blandy	Detroit school board member
Deborah McGriff	Detroit school general superintendent

6A DETROIT FREE PRESS/TUESDAY, JANUARY 7, 1992

Detroit Free Press
AN INDEPENDENT NEWSPAPER
321 W. Lafayette, Detroit, Mich. 48226
(313) 222-6400

IN OUR OPINION

LAWRENCE PATRICK

He did what Detroiters asked: He put students first

Lawrence Patrick was part of the original HOPE team — a trio of reformers who burst with a fresh wind into the stale rainwater of the Detroit Public Schools in the fall of 1988 and provoked a revolution.

The HOPE team laid out ambitious plans for shaking up the district's structure, decentralizing decision-making and involving parents in the process of educating children. They received support from the community and soon were able to forge a working majority on the school board. Mr. Patrick became the board's president and led it through what have been some of the most dramatic years in the district's history.

So what is one to make of his surprising decision not to seek re-election as board president (even though he plans to remain a member) and devote his energy to a new role as chairman of a yet-to-be-created educational organization? The mission of this so-called HOPE team (let's the "pro" has) hardly been accomplished, and some of its salient promises have yet to be fulfilled. Moreover, the board's critics can point to [illegible] — by the count of Mr. Patrick's watch, especially during the last year.

The magnet academy project was bungled. The Wayne State University proposal for experimental schools never took off. And — most alarming — two years after preparations started on the empowerment plan, only a few schools have signed up. Not unpredictably, there have been doubts lately about whether the district is being led in the right direction, and whether Mr. Patrick is the leader the district needs at this juncture.



Lawrence Patrick

Mr. Patrick's supporters argue with much justification that the process of reforming the district is largely on track, if not on schedule. They say that the implementation, hard work of laying the foundation has been advanced and that the community should begin to see the results of these structural changes before long.

Mr. Patrick's contributions to reform include his role in recruiting [illegible] superintendent and, last year, Deborah McGriff as permanent chief administrator. He remodeled the bickering, contentious board that he joined three years ago into the focus for creative, orderly change that it is today.

Mr. Patrick's successor will find his or her [illegible] in large [illegible] of the reform. His hard work, patience, unfailing grace under pressure and persistence in championing the interests of District students above all other interests in the system have earned him our respect.

THE LIONS

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Patrick confirms he'll resign as chief of Detroit school board

By Ron Stassell
THE DETROIT NEWS

Lawrence C. Patrick Jr. on Monday confirmed that he's resigning as Detroit school board president, acknowledging that education reform "still has ahead, despite three years of trying.

Patrick, criticized by some community activists for failing to win consensus for change, announced his plans as the district released results of a new public opinion survey in which more city residents gave schools D's and F's than A's and B's.

Patrick, who steps down Jan. 14 after three years as board president, criticized unions and other opponents, saying they fear changes that would give teachers and administrators greater autonomy while expanding parental choice.

"They don't want to be held accountable to parents and taxpayers," he said.

Patrick said he will continue efforts to reform the 167,000-student system as voluntary chairman of the Detroit 2000 Coalition, a blue-ribbon panel committed to achieving President Bush's national education goals in city schools.

"I have concluded that I can best serve the children and taxpayers ... through my leadership of the Detroit 2000 Coalition," said Patrick, who will remain on the school board.

Patrick said the system can concentrate on student achievement, because in the last three years it has restored financial stability and streamlined management.

Board Vice President Frank Hayden is widely expected to be elected president at the board's meeting next week. But on Monday, he wouldn't say whether he would run.

The public opinion survey, conducted in November by a Southfield firm, gave the school system an overall C-minus grade, about the same as a poll conducted during the 1990-91 school year. Four hundred people responded to the random telephone survey.

Grades are improving slightly, but nearly a third of respondents rated the system a D or an F. About 28 percent gave A's or B's.

El Charles Anderson, president of the City-Wide School Community Organization, said the poll reflects generally more positive attitudes toward the district.

Ex-Birmingham businessman pleads guilty to drug, tax evasion charges

Ryan Bellerin and Colorado's between 1981 and 1988. He also pleaded guilty

prison with no parole in exchange for dismissal of charges against his wife,

trial.

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R-96%

Making a Case for Vouchers

The Detroit school board wanted to experiment with a different teaching concept involving about 400 boys in a school system with 170,000 students. The school board wanted to offer specialized education in boys-only schools. Now, the full weight of the federal judiciary has been brought down on the school system to crush the educational experiment. By God — and the order of Federal Judge George Woods — there will be no experimenting, no trying anything out of the ordinary to save Detroit's faltering male students.



L.A. TIMES SYNDICATE

The judge's ruling is a clear example of the increasing sclerosis being imposed on all institutions by our legal system. The boys are dropping out at a 20 percent greater rate than girls, and get double the short-term suspensions. In the face of these statistics, the school board wanted to try an alternative strategy with a small fraction of its total enrollment — all made up of volunteers. Now it can't. If the legal system can't allow that, there's something wrong with the legal system.

Detroit Schools Supt. Deborah McGriff was on to something when she complained that the plaintiffs in the case, the American Civil Liberties Union (ACLU) and the National Organization for Women Legal Defense and Education Fund (NOWLDF), were outsiders interfering in a Detroit matter. The fact that there were originally two parents complaining that the academies excluded their daughters doesn't alter the fact that the lawsuit was an exercise in free-lance policy-making by two wholly self-selected advocacy groups. They used Judge Woods' courtroom to impose their policy preferences on the city.

The members of the school board who opted to try this experiment are vested with the sovereignty conferred on them by the electorate. NOWLDF and the ACLU are not. That is the key point at the root of Supt. McGriff's valid complaint at their interference.

Judge Woods has now ordered the publicly elected school board to negotiate with the self-selected interest groups over how and if the male schools will open with females included, this giving them effective veto power over elected officials.

What's odd about all of this is that the ACLU and NOWLDF have said they would accept some sex-segregated classes. Thus, they have implicitly conceded that there may be some educational value to sex-segregated classes. So despite their lawsuit and their equal protection arguments in front of the judge, they are really merely involving themselves in the purely administrative issue of when and how sex-segregated classes will be held, not whether they will be held at all. And Judge Woods has given these self-selected policy-makers more leverage over the issue than the board or superintendent.

This is a dumb decision on the part of the judge — a frequent result when the legal system is invoked in a policy dispute.

Whatever action the school board takes, there will be quibbles. But if NOWLDF and the ACLU succeed in tying up with legal red tape the school board's efforts at experimentation, they may have unwittingly made one of the best possible arguments for vouchers, in which parents simply get taxpayer money to spend on any school of their choice, including private ones.

TELEFAX COVER SHEET

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Executive Office of the President
Washington, D.C. 20506

Clearance (to Geneva) _____ Date 11-7-92

Time Sent _____ C.D. Log Number _____

All Originals Will Be Returned Number of Pages Excluding Cover 5

TO:	NAME:	AGENCY:	PHONE #:	FAX #:
	Carol Rashus		x7750	x 6218

FROM: Claude Burchyo

PHONE: 395-3412

FAX #: (202)395-3911

CONTACT: Comouter Operations Information Service Desk: (202)395-3417

SUBJECT: U.S. - Canada Free Trade

COMMENTS: Job figure to follow ASAP

APR 6 '92 13:58 FROM USTR PAGE.001

U.S.-Canada FTA

- CFTA established world's largest and most comprehensive bilateral FTA. In 1991 over $200 billion worth of goods and services flowed between the U.S. and Canada, making this our largest bilateral trading relationship.

- Implementation of CFTA has proceeded smoothly over the past three years. Traders and investors on both sides have moved to take advantage of the progressive reduction and elimination of trade and investment barriers.

- The many bilateral institutional mechanisms of the CFTA have proven useful in resolving a number of issues before they could become serious disputes.

- Given the size of the relationship and scope of the CFTA, remarkably few disputes have arisen. Those disputes which have arisen are being managed and the dispute settlement mechanism is working.

- Under CFTA trade and investment have increased, and competitiveness has improved.

  - Total merchandise trade grew from $131 billion in 1987 to $175 billion in 1990, or 33.6%. ~~Due to recession in both countries, merchandise trade for the first three-quarters of 1991 was at the same level for the identical period in 1990, or $131 billion.~~

  Trade continued to grow in '91 despite recession in both countries $176 b '91

  - Trade in services grew from a bilateral total of $14.8 billion in 1987 to $20.2 billion in 1990 or 36.5%. $21.2 b in '91

  - U.S. direct investment in Canada also grew from $57 billion in 1987 to $71 billion in 1990, a 24.6% increase. $71.3 b in '91

  - Canadian investment in the U.S. increased 50% during the 1987 to 1990 period, from $22 billion to $33 billion. N/A for '91

- The outlook is for further growth in the economic relationship as the staged removal of trade and investment barriers continues during the 10 year phase-in period.

- One of the most acclaimed successes of CFTA's liberalization of trade has been the accelerated elimination of tariffs.

- Under this CFTA provision, widely supported by businesses on both sides, tariffs have been eliminated more quickly on over 400 products valued at $6 billion in 1990 and on over 250 products valued at $2 billion in 1991. A third round of

accelerated tariff negotiations recently was initiated and will continue through out this year.

- As a private sector driven exercise, tariff acceleration is significant for the support and confidence of the business community demonstrated in the CFTA.

o U.S. CFTA "benefits" in 1990

- Establishment by Canadian Copyright Board of adequate royalties to be paid to U.S. copyright holders.

- Removal of Ontario restrictions on use of provincial highways by U.S. manufactured super-trailers.

- Negotiated agreement on interim access for U.S. exports of hatching eggs and chicks.

- Negotiated agreement on U.S. interim access to unprocessed Canadian West Coast salmon and herring.

- A change in Canadian uranium processing policy permitting the export of unprocessed uranium to U.S. plants for upgrading.

o U.S. CFTA "benefits" in 1991

- Elimination of Canadian Wheat Board import licensing for U.S. wheat and wheat products.

- Ontario Government's abandonment of plans for a provincially-run monopoly for auto insurance.

APR 6 '92 13:59 FROM USTR PAGE.003

March 1992

CANADA FACT SHEET

1. Profile

Population (1991): 26,833,000
Religion: Catholic (48%), Protestant (42%)
Government: Parliamentary
Prime Minister: Brian Mulroney
Languages: Two official languages--English and French
Current Prime Minister's term ends: Must call an election by November 1993.

2. Economy (US $)

	1988	1989	1990	1991
GDP ($ billions)	490.2	550.3	581.2	584*
GDP (constant '86 $'s)	446.2	477.7	481.5	N/A
GDP Per Employee	40,030.0	44,073.0	46,230.0	N/A
GDP Per Capita ($)	18,782.0	20,813.0	21,746.0	22,000*
Inflation	4.0%	5.0%	4.8%	6.0%*
Average Unemployment	7.8%	7.5%	8.1%	10.3%*
Official International Reserves ($ billions)	16.2	16.8	18.6	16.9
Exchange Rate (1US$=C$)	1.23	1.18	1.17	1.15*
Industrial Product Price Index (1986=100)	107.3	109.0	109.7	N/A
Canadian World Exports($ billions)	111.2	116.7	125.2	141.8*
Canadian World Imports($ billions)	103.3	112.8	115.9	139.8*

3. U.S.-Canada Trade ($ billions)

	1988	1989	1990	1991
MERCHANDISE:				
U.S. Exports	71.6	78.8	83.7	85.1
U.S. Imports	81.4	87.9	91.4	91.1
TOTAL	153.0	166.7	175.1	176.2
BALANCE	-9.8	-9.1	-7.7	-6.0

APR 6 '92 14:00 FROM USTR PAGE.004

	1988	1989	1990	1991
SERVICES:				
U.S. Receipts	9.9	11.2	12.8	14.8
U.S. Payments	7.7	7.7	7.4	6.5
TOTAL	17.6	18.9	20.2	21.3
BALANCE	2.2	3.5	5.4	8.3
GOODS AND SERVICES:				
TOTAL	170.6	185.6	195.5	197.5
BALANCE	-7.6	-5.6	-2.1	2.3
PRIVATE RECEIPTS ON U.S. ASSETS IN CANADA:				
U.S. Receipts	15.8	14.9	12.3	11.3
U.S. Payments	3.7	3.6	4.4	2.5
TOTAL	19.5	18.5	16.7	13.8
BALANCE	12.1	11.3	7.9	8.8
GOODS, SERVICES, AND PRIVATE RECEIPTS ON U.S. ASSETS IN CANADA:				
U.S. Exports/Receipts	97.3	104.9	109.0	111.2
U.S. Imports/Payments	92.8	99.2	103.2	100.1
TOTAL	190.1	204.1	212.2	211.3
BALANCE (Current Account)	4.5	5.7	5.8	11.1

4. Foreign Direct Investment ($ billions)

U.S. Direct Investment in Canada	61.0	63.0	71.0	71.3*
Canadian Direct Investment in the United States	27.0	30.0	33.0	N/A

5. Best U.S. Export Prospects (top ten)

Computers and peripherals; auto parts and accessories; telecommunications equipment; building materials and supplies; trucks, trailors and buses; aircraft and parts; plastic materials and resins; construction machinery and parts; electronic components; analytical and scientific instruments.

APR 6 '92 14:00 FROM USTR PAGE.005

6. **Canada-Mexico Merchandise Trade** (U.S. $ millions)

	1987	1988	1989	1990
Canada exports to Mexico	399	406	527	507
Canada imports from Mexico	876	1,079	1,443	1,479
TOTAL	1,275	1,485	1,970	1,986
Canada's Balance	(477)	(673)	(916)	(972)

SOURCES:

Survey of Current Business, U.S. Department of Commerce.

U.S. Foreign Trade Update, U.S. Department of Commerce.

Exports/Imports by Country, Statistics Canada.

*U.S. Embassy Estimates.

4/6/92

Andy --

A few notes on Detroit C of C:

David talked to Henson. Seems it's less a "human face of the five pillars" speech, and more an ABC re-do, with an eye to the mid-size companies likely to be represented at the Det. Chamber of Commerce.

-- should look for places to hit our Detroit-specific policies:

-- regulatory reform; cash for clunkers, CAFE, canisters, etc. (stuff announced in last Detroit speech, 3/13 and on the Monday following.)

-- battery consortium, Oct. 91, to design electric batteries. Any representatives → ck. w/ Policy new

-- defense of Japan trip. ⇒ Trade pillar

-- should have a riff somewhere pointing to rebound of U.S. aotu industry: E.g. "By the year 2000, I see American auto makers expanding market share...." positive

-- include a place-holder for a Job Training announcement. education

Yeutter: Tim Adams

Job Training 2000

standards & certification issues

49 agreements $23 bill. in auto parts ~~stars~~

smaller - less growth
risk taking
hardy competitors

demonstrate
Cost of business
make them more competetive

Trade - open for markets
Americans need to compete
level playing field:

Gov't - reg reform Congressional reform 6-package (term limits)
one thing that goes

Services of Mead Data Central, Inc.

2ND STORY of Level 1 printed in FULL format.

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The Washington Times

February 11, 1992, Tuesday, Final Edition

SECTION: Part F; COMMENTARY; EDITORIAL; Pg. F2

LENGTH: 624 words

HEADLINE: And justice for some

BODY:

Did you hear the one about the Pennsylvania fortuneteller? Following a CAT scan at a hospital, she claimed to have lost her psychic powers. A sympathetic Philadelphia jury subsequently awarded her $1 million for her troubles.

This is one of many legal horror stories that Peter Huber recounts in his book, "Galileo's Revenge: Junk Science in the Courtroom." The good news is that the presiding judge in the case threw out the award. The bad news is that this case got as far as it did. The plaintiff in the case benefited from "expert witnesses," a doctor and police officials, who backed up her complaint and helped convince the jury. How anyone can be an "expert" on soothsaying isn't clear, but it may have something to do with the fact that there was a million dollars, including fees for "experts," at stake. It gives "fortunetelling" a whole new meaning.

This sort of court case wastes tax dollars, ties up judges and courts that have real legal claims to deal with and drives up consumer costs when businesses pass on rising insurance costs. It's also the kind of case that Vice President Dan Quayle and his Council on Competitiveness want to keep out of courtrooms in the future. In remarks to the American Tort Reform Association last week, Mr. Quayle proposed legislation that would require expert testimony to be based on widely accepted theories. A significant portion of experts in the field would have to agree with the substance of the testimony. This is a standard that, as it happens, already helps distinguish junk science from the real thing.

The vice president's no-junk proposal is one of many he is promoting in an Access to Justice Act that the Bush administration is pushing in Congress. The idea is to get control of a tort system that has become a wheel of fortune for lawyers and plaintiffs but something less than justice for everybody else.

From 1960 to 1990, the number of lawsuits in this country has almost tripled, to 250,000 annually. According to the Conference Board, a group of business concerns, this boom in litigation has led manufacturers to withdraw consumer goods from the market, forced others to stop product research and wiped out American jobs. All in all, reports Forbes magazine, spiraling litigiousness will cost this country about $300 billion this year.

In addition to cutting down on junk science in the courtroom, Mr. Quayle's tort reform includes encouraging resolution to disputes through mediation and arbitration, limiting the "discovery" process (in which litigants rifle through all their opponents' file cabinets), making losers in a case pay the court costs of the winners and requiring lawmakers to consider the litigation hazards of poorly drafted legislation. The vice president should make sure these and

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1992 The Washington Times, February 11, 1992

other proposals also apply to the U.S. Justice Department, which happens to be the biggest, most litigious law firm in the country.

Naturally, the trial lawyers aren't crazy about the Access to Justice Act. American Bar Association President Talbot D'Alemberte, who has been in a running argument with Mr. Quayle for months over tort reform, seems to think that there is nothing wrong with the justice system in this country that a little more tax money couldn't resolve: more money to re-establish something called the Office of Improvements in the Administration of Justice, more money for the Legal Services Corp., more money for Social Security administration. And so on.

Outside of the trial lawyers and assorted "public interest" groups, there aren't many people out there who really believe more money means more justice. It will take the Quayle reforms to push justice for all, not just for lawyers.

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Remarks at the Announcement of Agreement Between the Department of Energy and the Advanced-Battery Consortium.

October 25, 1991

Thank you all. And, Jim Watkins, thank you very much. You may want to sit there, this is fairly long. [*Laughter*] May I salute not only Secretary Watkins but Secretary Mosbacher; and Bill Reilly, our Administrator; Chairman Deland was, here he is here, Mike Deland. And, of course, single out Senator Johnston and Senator Riegle with us today.

And I would like to thank the three representatives of the automotive industry who are with us and who have had such an important part to play in all of this. Welcome to the White House, all of you, and to an event that shows how America's genius rests on the timeless qualities of enterprise and ingenuity, qualities which can make the next century the new American century.

When I first heard I'd be getting together with America's competing big three, I thought Jennings, Rather and Brokaw would descend on the White House. [*Laughter*] So, this is a very pleasant experience, and, actually, I think it's terrific that these three large motor companies were brought together in mutual cooperation.

Earlier today, I mentioned to one of my grandkids this idea that I'd be out here giving a speech about electric batteries. He said, "I hope it's not interrupted by that pink bunny with a drum." [*Laughter*]

Six months ago, Chrysler, Ford and GM, together with California Edison and the Electric Power Research Institute, formed a consortium to develop improved batteries for electric automobiles. And they knew that widespread use of electric vehicles wouldn't become a reality until someone built more powerful, less expensive electric batteries.

And today, I am very proud to announce this agreement between this consortium and our Department of Energy, supported by utilities and battery manufacturers, to move us closer to that day. We've joined in a 4-year research project to create a new generation of batteries. And the goal: nothing less than to make electric vehicles competitive by the year 2000.

This private-public partnership will employ market forces, as Jim mentioned, to protect natural resources and point us toward a cleaner, more prosperous fuel and future. And it will help us reduce dependence on foreign oil and help us reduce pollution. It will also create American jobs for engineers and scientists during this R&D period and for battery manufacturers and then the support industries as this project moves into commercial production.

You know, regulating increased fuel economy will not significantly reduce our dependence on uncertain sources of foreign oil. And to accomplish that, we need alternatives to gasoline, and the electric vehicle is one of the most attractive alternatives around. The development of a competitive electronic auto industry will do more to reduce oil imports than rigid fuel efficiency standards that risk jobs and public safety. And let's remember: senseless overregulation is always a one-way dead end.

But while batteries have brought us together today, batteries are not all that this day is about. The group gathered here points to a new way of doing business: combining industry and Government's intellectual and productive assets to sustain our competitiveness in the whole international arena. Electric vehicles represent the next technology milestone in the auto industry. And we intend to beat our competitors to that milestone.

Today's agreement embodies an idea whose time has come, that Government and business can help America outthink, outwork, and outperform any nation in the world.

Earlier this year, I announced the administration's national energy strategy, a blueprint of powerful ideas for America's future. And I want to salute Senator Bennett Johnston who's been a key leader. I don't want to say partner because that might make you all believe he believes in every detail we are emphasizing. But he's done a superb job up there in the Congress working with the Department of Energy and the White House. And I would like to avail myself of this opportunity to encourage support for our energy bill.

The agreement fits into the blueprint of America's future being strong. It reflects

our commitment to diversify transportation fuels. I believe there's plenty of safeguard for the environment in it, advancing technology and increasing industry participation in research and development.

And that strategy is key to achieving for all Americans a secure, clean, and affordable energy future. The U.S. Senate will soon consider comprehensive energy legislation—it's Senate bill 1220—incorporating many of the principles that shape our strategy. And I urge Congress to do its part by enacting strong energy legislation like Senate bill 1220. This legislation is environmentally sound. It does not threaten to throw a lot of automobile workers out of work by enacting excessive CAFE standards.

And it was once observed, "Our Union is river, lake, ocean, and sky." It is also people dreaming dreams of endless possibility, caring, toiling, creating, and achieving.

And let me thank you all for coming to the White House. And it's now my privilege to witness the signing of an agreement that reaffirms the spirit of America, that tomorrow will be even better, brighter, and greater than today.

Thank you all very, very much. [*Applause*]

Note: The President spoke at 10:42 a.m. on the South Lawn at the White House. In his remarks, he referred to Secretary of Energy James D. Watkins; Secretary of Commerce Robert A. Mosbacher; William K. Reilly, Administrator of the Environmental Protection Agency; Michael R. Deland, Chairman of the Council on Environmental Affairs; Senators J. Bennett Johnston and Donald W. Riegle, Jr.; and television network anchormen Peter Jennings, Dan Rather, and Tom Brokaw.

The President's News Conference
October 25, 1991

The President. Well, I have a brief statement, and then I'll be glad to take a few questions.

After extraordinary debate and negotiation, we have reached an agreement with Senate Republican and Democratic leaders on a civil rights bill that would be a source of pride for all Americans. It does not resort to quotas, and it strengthens the cause of equality in the workplace. Both the administration and the Congress can present this legislation to the people of America as a new standard against discrimination and for equal opportunity.

This agreement was reached last night in marathon negotiations, shepherded by Senator John Danforth of Missouri, nurtured by Senator Dole and other leaders of both parties. It was a proud accomplishment for the Congress and the administration. And now we can go forward together in progress on civil rights in this country.

I remember standing out there in the Rose Garden with Attorney General Thornburgh more than a year-and-a-half ago, to make an unshakable commitment to the Nation's civil rights leaders that I wanted a nonquota civil rights bill that I could sign. And assuming there are no changes in the bill as agreed to last night, we now have such a bill. And my promise will be kept, and I will enthusiastically sign this bill.

Another subject: on the Middle East peace conference. I want to note the historic nature of this meeting. The Middle East has been characterized by dangerous and tragic conflict for decades. The peoples of this region still have enormous differences. But I want to commend the statesmanship of the leaders of all those parties attending the peace conference.

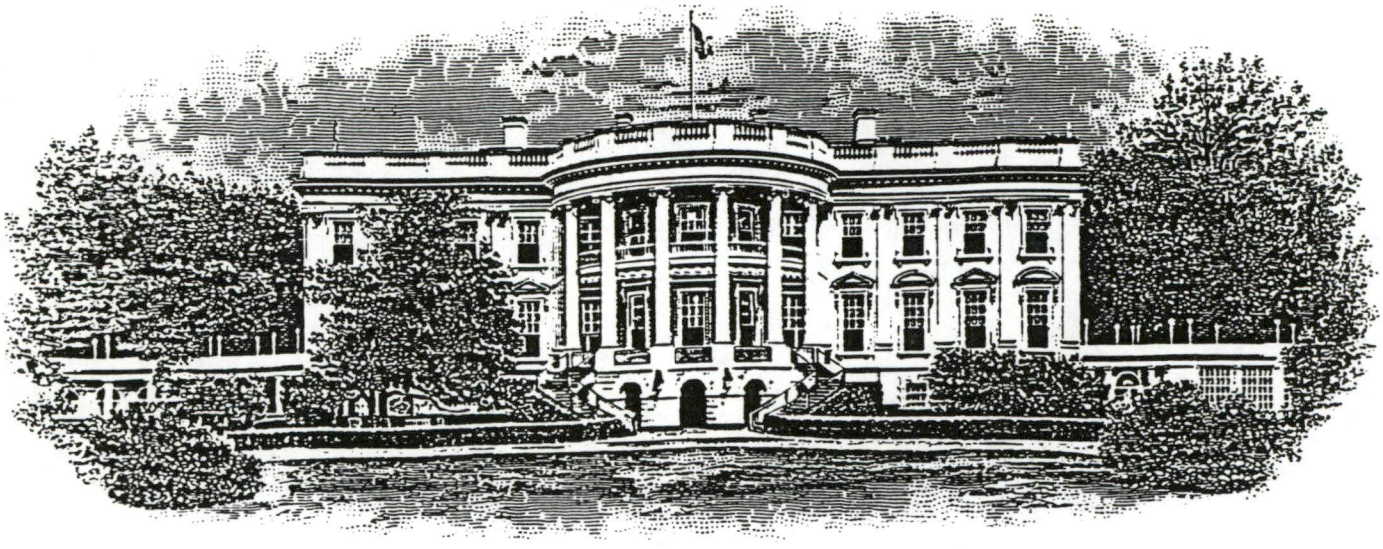
Sitting down together is the beginning of understanding. And we cannot know the outcome, of course. It will take patience and determination. The United States cannot make peace in the Middle East; only the parties themselves can do that. But we can and will be a committed and active partner in the search for peace.

Secretary Baker has been patient. He's been steadfast. He's been tirelessly disciplined in working with the Soviet Union and all the parties in the region to make this conference and the promise of peace a reality. We owe him a major debt of thanks.

I also go to Madrid to meet with President Gorbachev. And I know that President Gorbachev joins me in wanting to put the

THE WHITE HOUSE

WASHINGTON



FACSIMILE TRANSMITTAL SHEET

NUMBER OF PAGES INCLUDING COVER 4

DATE 3/13/92

TO PEGGY KNIGHT

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OFFICE OF PUBLIC LIAISON

FROM KATHY JEAVONS

COMMENTS Have fun! ☺

OFFICE NUMBER 456-7845

FAX NUMBER (202) 456-1647

WE'RE AT MIDPOINT IN THAT REVIEW. BUT EVEN NOW, YOU CAN SEE THE RESULTS -- THE SHEER VOLUME OF NEW RULES AND REGULATIONS IS DOWN TO 25 A WEEK, FROM 6 TIMES THAT AMOUNT JUST ONE YEAR AGO.

ALREADY, WE'VE ANNOUNCED REGULATORY RELIEF TO BENEFIT SECTORS OF OUR ECONOMY FROM BIOTECH TO ENERGY. WE'RE LOOKING NOW FOR CREATIVE, NEW WAYS TO USE REGULATIONS TO CLEAN UP OUR ENVIRONMENT. //

TIMES HAVE CHANGED SINCE THE DAY 20 YEARS AGO WHEN CAFE STANDARDS CAME INTO EXISTENCE. WE NOW KNOW THAT CAFE CAN COST JOBS -- AND EVEN LIVES -- ON THE HIGHWAY. RIGHT NOW, THROUGH MY DEPARTMENT OF TRANSPORTATION, I'VE BEEN WORKING WITH THE AUTO INDUSTRY AND THE UAW TO FIGHT IRRESPONSIBLE LEGISLATION. <u>I WILL NOT SIGN CAFE LEGISLATION THAT WILL DESTROY THE AUTO INDUSTRY AND COST AMERICAN JOBS</u>. //

THERE IS ONE REGULATORY REFORM I CAN ANNOUNCE TODAY. FOR SOME TIME, THE E.P.A. HAS BEEN CONSIDERING A REQUIREMENT TO ORDER THAT ALL NEW CARS BE EQUIPPED WITH ON-BOARD CANISTERS TO CATCH AND CONTAIN FUMES COMING FROM THE GAS PUMP. AS A RESULT OF OUR REGULATORY REVIEW, WE HAVE DECIDED AGAINST SUCH A RULE. THE DEPARTMENT OF TRANSPORTATION DETERMINED THAT ON-BOARD CANISTERS POSE A REAL RISK TO SAFETY -- A RISK WE SIMPLY CANNOT IMPOSE ON AMERICAN DRIVERS. WE WILL TAKE FURTHER REGULATORY STEPS EFFECTING THE AUTO INDUSTRY IN THE NEAR FUTURE.

IF WE WANT TO MAKE AMERICA MORE COMPETITIVE, WE'VE GOT TO MOVE FORWARD ON CIVIL JUSTICE REFORM. TOO MANY BUSINESSES CAN'T START UP OR KEEP GOING BECAUSE TOO MANY LAWYERS AND TOO MANY LAWSUITS GET IN THE WAY -- 18 MILLION LAWSUITS LAST YEAR ALONE. RIGHT HERE IN DETROIT, THERE ARE BUSINESSMEN AND WOMEN READY TO EXPAND, READY TO HIRE NEW WORKERS -- STOPPED COLD BY THE FEAR OF LITIGATION. ALL TOLD, WHEN YOU ADD IN INDIRECT EXPENSES, LAWSUITS COST THIS ECONOMY $300 BILLION DOLLARS A YEAR. // IT'S TIME FOR REFORM -- TIME TO REPLACE THE EXPLOSION OF MINDLESS LITIGATION WITH A LITTLE COMMON SENSE. //

Canisters

92 MAR 12 P6:54

DRAFT 3/12/92

THE WHITE HOUSE

Office of the Press Secretary

March 13, 1992

FACT SHEET

The President announced today that, in light of safety concerns raised by the Department of Transportation (DOT) and others, the Environmental Protection Agency (EPA) has decided not to require automakers to equip new cars with "onboard refueling vapor recovery systems," known as onboard canisters. EPA's decision will not only promote safety, but will also relieve the automobile industry of a costly regulatory burden.

- Gasoline vapors emitted during vehicle refueling contribute to ozone problems in many urban areas. The use of onboard canisters is one of the approaches that have been considered for controlling these emissions.

- Under the Clean Air Act Amendments of 1990, EPA was directed to consult with the Department of Transportation regarding the safety of onboard canister systems before deciding whether such systems should be required.

- As part of this consultation process, DOT conducted several studies and concluded that onboard cannister systems unnecessarily increase the risk of vehicle fires. Noting that safer, alternative control measures are available, DOT recommended that onboard systems not be required.

- After careful review of DOT's analysis, EPA has concluded that onboard systems pose an unreasonable safety risk, and therefore has decided not to require automakers to include such systems on new cars.

- The necessary pollution reductions will be achieved through safer, less costly means that can be targeted at high pollution areas.

The President also announced that, as part of his 90-day regulatory relief initiative, the Administration will be taking additional actions that will improve economic conditions in the automobile industry and, at the same time, reduce costs to American consumers and promote a cleaner environment.

Detroit Chamber of Commerce Speech
Tuesday, April 14, 1992
Detroit, Michigan

Department of Commerce

William Cavitt, Director of Canada Office
John Doh, Cananda Office
Jeff Hawkins, Canada Office
202-377-4464

Factoid

In 1989, the Greater Detroit Chamber of Commerce stated that there were 34 Canadian-owned companies with 4,136 (total) employees in southwest Michigan. In 1990, they counted 56 Canadian-owned companies, with 6,768 (total) employees.

Chief of Staff

Skinner used a fact in an intro of POTUS for the NCSL speech that went something like, "For every American car that is priced, $800 of the price tag goes for health insurance for the workers. For every Japanese car that is priced, $250 of the price tag goes for health insurance."

cash for clunkers

THE WHITE HOUSE

Office of the Press Secretary

March 18, 1992

FACT SHEET ON TRANSPORTATION REFORMS

As part of the President's 90-day regulatory relief initiative, the Administration today announced several actions to reduce the economic burdens created by federal regulation of automobile, truck, rail, and ocean transportation.

Federal regulation in the transportation sector can have at least three harmful effects on American consumers and workers. First, regulation can increase costs borne directly by consumers -- for example, the costs of cars and airline tickets. Second, because transportation generally accounts for 20 percent of the delivered cost of manufactured products, regulation acts as a "hidden tax" on all consumer goods. Third, unnecessary regulation makes all American goods and services less competitive in the world marketplace, and thereby leads to lower wages and employment.

By reducing regulatory burdens, the following actions will help create jobs, make American goods and services more competitive abroad, and reduce prices to consumers.

1. Reducing the Environmental Costs of Automobile Transportation. One cost-effective way to reduce pollution in many urban areas is to retire older cars, which are the dirtiest and least efficient on the road today.

- Within the next two weeks, EPA will issue a guidance document encouraging states to adopt programs that allow businesses to satisfy the requirements of the Clean Air Act by purchasing and retiring old, high-polluting vehicles. In addition to cleaning up the environment, car scrappage programs will also reduce the regulatory burden on U.S. businesses and reduce reliance on imported oil.

a three-for-one deal

- The EPA "cash for clunkers" program is just one example of innovative, market-based programs that allow trading of emission reduction credits between "stationary sources" (like factories and power plants) and "mobile sources" (like cars). EPA will develop more general guidelines to clarify that businesses and state and local governments may satisfy Clean Air Act requirements by trading emissions reductions between mobile and stationary sources. Such trading will further reduce compliance costs, thereby promoting jobs,

cash for clunkers

economic growth, and environmental quality.

2. Reducing the Costs of Truck and Rail Transportation. Because most consumer products and manufacturing materials are shipped by rail or truck, consumers and workers inevitably suffer when the government imposes excessive regulatory costs on truck and rail transporters. The Interstate Commerce Commission (ICC) today announced several actions to amend or repeal existing regulations that impose unnecessary regulatory burdens, or that unduly interfere with the ability of some 52,000 motor and rail carriers to negotiate and implement mutually beneficial transportation arrangements with their customers. Specifically, the ICC announced that it will:

- initiate a proceeding to expand unregulated "commercial zones," and thereby further deregulate trucking in large metropolitan areas;

- initiate a proceeding to accelerate elimination of the requirement that motor carriers obtain a registration stamp for each of their vehicles from each state in which they operate;

- initiate a proceeding to abolish the requirement that motor carriers keep a unique set of "regulatory" accounting books in addition to standard financial and tax records;

- conclude a rulemaking that will further deregulate motor contract carriage by repealing the regulatory definition of "contract" and allow carriers to rely instead upon the simpler definition contained in the statute;

- initiate a proceeding to streamline and simplify motor carrier tariff regulations, easing the burden on carriers for filing negotiated rates in lawful tariffs and thereby making it easier for shippers to protect themselves from future undercharge claims;

- conclude a proceeding to exempt railroads and their customers from current regulations requiring them to file contracts for private rail carriage;

- conclude a proceeding to allow railroads to establish market-based rates for the use of each other's rail cars;

- propose a rule to permit rail carriers to establish market-based incentives to ensure that rail equipment is not unreasonably detained at shippers' facilities;

- conclude a proceeding to exempt railroads from the Elkins Act, thereby permitting them to engage in business development activities;

- propose simplified rules governing consolidation, merger, and control cases that involve no more than one major, Class I railroad, thereby reducing paperwork and shortening decision time;

- complete a rulemaking to treat the Postal Service like other shippers by relieving it of the burden of filing with the Commission copies of its motor carriage and rail contracts.

When fully implemented, these reforms have the potential to reduce the total costs of truck and rail transportation by more than $1 billion annually.

3. Reducing the Costs of Ocean Shipping. Importers and exporters spend more than $30 billion per year to transport U.S. goods to foreign markets and to bring foreign goods to U.S. consumers. The cost of ocean shipping adds a significant percentage to the delivered cost of goods. Various federal agencies today announced several steps to reduce the costs of ocean shipping:

- Current Federal Maritime Commission (FMC) rules do not permit shippers to amend service contracts, even with the consent of the ocean carrier. Those rules also do not permit shippers to combine their worldwide shipping contracts into a single contract with an ocean carrier. To correct these problems, the FMC will initiate two rulemakings to allow amendment of service contracts, and to allow service contracts of worldwide scope.

- The Coast Guard will initiate a rulemaking to establish streamlined record-keeping practices for vessels subject to Coast Guard jurisdiction.

- The Maritime Administration (MARAD) will complete a rulemaking to eliminate unnecessary oversight of certain mortgage and sales transactions and encourage investment by reducing the costs of financing transactions.

Giddings & Lewis — 1 pt US 4th lgst world machine tool maker

Flags outside — they have plants in these cos.
Can. US Jap Ger. UK

make automation equip.

Quality policy — "do it right the 1st time" ↑
every employee signs the wall
that says this.

POUS site is where they put mach. together.

≈ 2:30 pm — in warehouse looking plant area

≈ 1500 people

employees + chamber people

Gerald McCardy, controller
313-296-4789

Dale Norton, VP Bus. Planning
Fond du Lac, WI @ HQ
414-921-9400

2 mag. art. → 5/21/90 Fortune
9/16/91 Forbes

everything is in except George's mug.
- should have in one week.

Gfen to D2

(Ferguson/Aarhus)
April 6,1992
Draft One
DETROIT

PRESIDENTIAL REMARKS: DETROIT CHAMBER OF COMMERCE
TUESDAY, APRIL 14, 1992
XX:00 PM

[Acknowledgments]

I would like talk to you today about the things we must do together -- government and business, public servants and private citizens -- to leave our children the legacy they're entitled to. I think we agree on what that legacy must be. We want a world at peace; we want strong, wholesome families; and we want an economy that provides rewarding jobs for all.

More than any country on earth, America has afforded each generation the opportunity to leave such a legacy. It has done so by offering its people the freedom to adapt to the new, to test the untested, to change as times change and the world changes.

We have that opportunity once again. Today, the world is changing at a pace undreamed of a generation ago, and now America, which has led the world's transformation, must change as well. This afternoon I will discuss five areas which I believe are overdue for reform -- five key ways in which America must change, if we are to honor coming generations with the legacy they deserve.

As businessmen and -women you understand the urgency. For each of the problems I will address today presents itself to you not as an abstraction but in the most immediate way: as a cost of doing business. Too often these are costs beyond your control,

drawing resources away from your primary goals of growing companies and providing jobs for your communities.

When our legal system becomes incapable of resolving disputes in a civil and timely manner, business loses the incentive to innovate and take risks. When health care costs escalate, business picks up much of the tab. When government imposes barriers to trade, business pays the cost in lost marketshare. When our children leave school without rudimentary skills, business bears the burden in lost productivity. And when government grows cumbersome and intrusive, business can no longer plan rationally for the future.

Let me start with the crying need to reform our country's civil justice system. We have all heard the stories of bizarre and frivolous suits -- the one about the psychic, for example, who sued her doctor after a CAT scan destroyed her power to commune with a 17th century poet.

The stories would be funny if the price tag weren't so high. And American companies pay much of that price -- not only in dollars but in lowered productivity and a business environment inhospitable even to ordinary competitive practices. According to a recent survey, 40 percent of companies that had been the target of product liability suits have discontinued certain types of product research.

Lawsuit madness is an affliction our world competitors do not share. Only the United States has seen the number of lawyers double over the last generation. Only the United States spends

more than $80 billion annually in direct litigation costs, perhaps four times that in indirect costs.

We must remove this ball and chain from our ability to produce and compete worldwide. My competitiveness council, led by Vice President Quayle, has offered 50 recommendations for legal reform, including reasonable limits to the discovery process, alternative means of resolving disputes, and a loser-pays rule that would discourage frivolous lawsuits.

This broad legal reform won't be easy. We introduced a bill to reform our product liability laws in 1990. Congress refused to go along. We introduced the reform again in 1991. Senate Democrats refuse to bring that bill to a vote; in the House, it's stuck in <u>two</u> committees. The special interests are lining up against legal reform, and we can use your help in moving it forward.

If we're successful, the effects will be far-reaching, extending into another area critically in need of change -- our nation's health care system. The litigation explosion has hit Michigan's health care hard. Your physicians' and hospitals' medical costs are among the highest in the nation, adding an average of $300 to the average patient's hospital bill.

The human costs too are high: one out of every five obstetricians in Michigan has stopped delivering babies, thanks to lawsuit madness.

These trends are simply unsustainable. Already 13 cents of every dollar of national income goes to health care; some mid-

range estimates say that by 2030, that figure will be 30 cents of every dollar. Right now, American corporations spend more on health care each year than they earn in after tax profits.

Clearly the system must change. My proposed health care reform will build on our system's assets -- especially in preserving the quality of care, which for all its faults is still the world's finest. Instead, we will strengthen the private insurance market, and increase consumer choice. Through transferable credits we will bring coverage to the uninsured, and control costs through market incentives. And we will avoid the pitfalls of nationalized care, with the rationing and indifferent quality that come with it. The government has no business intruding between the patient and his doctor.

I have targeted a third area for attention -- like the others, absolutely critical for our success in the coming decades. If America is to succeed economically at home, we must succeed economically abroad. In the post-war period, trade-related jobs have grown at a pace three times that of overall job creation.

Continuing these trends requires vigilance in opening foreign markets to American goods and services. Over the past three years, exports have accounted for 70 percent of our economy's growth. The free trade agreement with Canada is a proven success, now the world's largest bilateral trading relationship supporting 1.5 million American jobs. We have the chance to lock in those gains by combining Mexico into a North

American Free Trade Agreement, creating a $6 trillion market from the Yukon to the Yucatan.

We're also concentrating on expanding access to the world's second largest market economy: Japan. Our exports to Japan are growing ten times faster than our imports from Japan, and our manufactured products are leading this expansion. The boom has already created an additional 200,000 jobs here at home.

It was in this context that I traveled to Japan earlier this year, to build on our successes. I heard some criticism of that trip, but let's get the facts straight. Of special interest to your region, for example, was the agreement by the Japanese to increase the purchase of U.S.-made auto parts to $19 billion annually by 1994.

And there was much more. As a result of our trip, we've opened up Japan's $4 billion glass market, its $9 billion computer hardware services market, and its $65 billion paper market -- offering American business enormous opportunities to sell American goods, which means, in the long run, many more American jobs.

We must take advantage of these new opportunities, and we will do so only if we have a world-class workforce. Yet the grim fact is undeniable: our current educational system is unable to produce the workers the highly competitive world market demands.

Consider this: English is now the language of international business; yet only 20 percent of 17-year-olds can write a simple two-paragraph letter applying for a job. The situation in

geography, math and science is equally dire. Too many businesses are forced to pay twice for the education of prospective employees -- once through taxes that support our schools, and again through job training to remedy the failures of those schools in education our young.

[Job Training insert]

The only solution left to us is radical change; we must literally reinvent American education. Our America 2000 initiative challenges communities to create break-the-mold schools. We need to set world-class standards for students and establish a system of voluntary national tests to measure their progress. We must redouble our efforts to rid our schools of drugs and violence -- to cleanse America of this scourge that wastes so many young lives. And we must make schools more accountable, by forcing them to compete. <u>That means giving parents the opportunity to choose their children's schools -- public, private, or religious</u>.

The reforms I've outlined here today -- restoring sanity to our legal system, ensuring quality health care for all, expanding world trade, and reinventing American education -- are essential to this country's future productivity.

But each powerful opposition from special interests who profit from the status quo. So I have targeted a final reform, no less important than the others. If America is to change, American government must change.

I have presented seven specific proposals to cure the paralysis that grips the Congress. My proposals range from an elimination of PACs, diminishing the special-interest influence, to a line-item veto, to get a handle on federal spending. And I think it's high time we limited the terms that members of both houses of Congress may serve.

The aim of these seven proposals is simple: to create a flexible government, responsive to the general interest of the people. I have tried over the past three years to make my administration responsive and flexible. Let me give you a few examples of special concern to the Detroit region.

A reformed government knows its limits, refusing to impose undue burdens on business and consumers alike. For that reason, I've made it clear to Congress: I will not sign legislation that increases CAFE standards and costs American jobs and even lives.

A reformed government encourages innovation. Last October, for example, the Department of Energy joined with the Big Three automobile companies to develop a new generation of batteries. Our goal: to make electric cars competitive by the year 2000.

A reformed government finds flexible means to reach its goals. The Clean Air Act of 1990 requires deep reductions in air pollution. To help communities and industries meet those objectives, we've initiated a "Cash for Clunkers" program, allowing state and companies to buy high-polluting old cars, get them off the road, and use the resulting reduction in pollution to satisfy our clean air standards.

The principle underlying all these approaches is the same: trust the genius of private enterprise. I go back to Jefferson: "The pillars of our prosperity are the most thriving," he wrote, "when left most free to individual enterprise." In practice that means government must trust the wisdom of markets more than the whims of bureaucrats. The freely made decisions of businessmen and women must take precedence over the engineering schemes of government. And all of our institutions -- from the U.S. congress to the local school board -- must be accountable to those they serve.

Over the last decade, America has changed the world. Today we are blessed with the opportunity to change America. With Jefferson's principle as our guide, we will meet the challenges, and exploit the opportunities, of the world that is now being born.

Thank you and God bless the United States.

# # # #

Greater Detroit Chamber of Commerce
600 West Lafayette Boulevard
Detroit, Michigan 48226
(313) 964-4000
FAX (313) 964-0531
Telex 740-2081-GDCC

Trade: Michigan/Ontario

	1989	1990
Ontario to Michigan	$18.2 billion	$29 billion
Michigan to Ontario	13.2 billion	15 billion

(For more information, contact Ronald Decker, Ontario Government, Chicago, Illinois - 312-782-8688.)

Michigan Companies with Subsidiaries in Canada = 100

Issue of Concern to Detroit/Michigan: border crossing delays are costly to business. Processing improvements are necessary, i.e. immigration and customs service. (See April 1991 comment by F.E. Smith attached.)

4/8/92

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 4

To Carol Clarhus	From Frank Smith
Co. The White House	Co. Greater Detroit Chamber
Dept.	Phone # 313-596-0320
Fax # 1-202-456-6218	Fax #



Frank E. Smith, CCE
President
Greater Detroit
Chamber of Commerce

Public officials have not begun to address border crossing problems

Regardless of the reasons for the increasing congestion at Detroit's border crossings to Canada, the problem deserves a higher level of attention from our public officials than it is currently getting.

In October, the Chamber board directed that contact be made with legislators and public officials asking for (a) staffing of additional customs booths, (b) improved capability to respond to changes in traffic volumes, and (c) additional federal resources for manpower and technical improvements.

In response, Detroit's City Council adopted a resolution supporting the recommendations of the St. Clair and Detroit Rivers International Crossings Study and joined the Chamber in urging state and federal support to resolve border crossing problems. Also, the Chamber was invited to serve as a member the Michigan-Ontario Border Crossings Committee established to monitor and facilitate the study's recommendations.

And, that's about it to date.

A proposed meeting of federal and state officials has not yet materialized. Details of a Michigan "Welcome Center" at the Ambassador Bridge remain unresolved as to timing, location and size. A program to collect "user fees" from persons entering the U.S. at its borders is under consideration — which concerns us immensely. Increased consumer taxes in Canada are encouraging more Canadians to shop in southeast Michigan, increasing the pressure on bridge and tunnel facilities.

At a time when we want to reap the benefits of free trade and tourism that our border with Canada provides, we find ourselves increasingly frustrated with finger pointing and indifference by responsible public officials.

Should any Chamber member be so motivated, please write your Washington and Lansing representatives urging action. I suggest a simple request...establish with Customs and Immigration & Naturalization Services an acceptable standard for clearing goods and people at border crossing points, and fund the improvements required to meet that standard.

Note: Those wishing for further information to include in their correspondence should call Claudia Berry at the Chamber, 596-0329.

Canadian Companies in Metro Detroit

	Establishments	Employment
1980	13	3,786
1981	16	5,516
1982	13	5,402
1983	14	6,152
1984	22	5,186
1985	39	4,719
1986	38	4,639
1987	39	4,390
1988	34	4,128
1989	59	6,824
1990	63	6,888
1991	59	6,828
1992	77	6,774

Source: Research Department, Greater Detroit Chamber of Commerce

4/7/92

Greater Detroit Chamber of Commerce
600 West Lafayette Boulevard
Detroit, Michigan 48226
(313) 964-4000
FAX (313) 964-0531
Telex 740-2081-GDCC

February 11, 1992

The Honorable George Bush
President
United States of America
The White House
Washington, D.C. 20500

Dear President Bush:

We are anxious to support your economic recovery plan.

Because of its position at the center of world-wide automotive manufacturing technology, Detroit consistently attracts the attention of every American and of observers from all corners of the globe. Probably after Washington, D.C. and New York, Detroit is next in terms of the established presence of media representatives who link us daily to audiences throughout the world.

For this reason and because the elements of your program to revitalize our nation's economy are of critical importance to this major metropolitan center and to the industry which has its roots here, we invite you to come to Detroit at your earliest convenience to address our community's representatives as part of your campaign to build support for your proposals.

International competitiveness, jobs, human services, and urban problems are among the major concerns facing Michigan and the Detroit area. Your leadership in addressing these issues will, with Congressional attention, restore the vitality of our nation's economy. We want to help.

This Chamber has a membership in Southeast Michigan of over 9,000 businesses. We are confident we can assure you of an enthusiastic local audience and significant national and international coverage of your visit to Detroit. We will welcome the opportunity to be your host . . . as soon as possible.

Sincerely,

Frank E. Smith

Frank E. Smith, CCE
President

cc: Governor John Engler
Bob Teeter

bc: D. Doyle
B. Gattorna
M Smith
H. Prechter
D. Davis

UNITED STATES DEPARTMENT OF COMMERCE
International Trade Administration
Washington, D.C. 20230

FACSIMILE TRANSMISSION SHEET

DATE: 4/8

FROM: **JEFF HAWKINS**
OFFICE OF CANADA

Fax 202-377-3718
Phone 202-377-3101

TO: CAROL AARUP

FAX: 456-[redacted] 6218

PHONE: _____

PAGES: _____ (including cover)

MESSAGE:

March 1992

CANADA FACT SHEET

1. Profile

Population (1991): 26,833,000
Religion: Catholic (48%), Protestant (42%)
Government: Parliamentary
Prime Minister: Brian Mulroney
Languages: Two official languages--English and French
Current Prime Minister's term ends: Must call an election by November 1993.

2. Economy (US $)

	1988	1989	1990	1991
GDP ($ billions)	490.2	550.3	581.2	584*
GDP (constant '86 $'s)	446.2	477.7	481.5	N/A
GDP Per Employee	40,030.0	44,073.0	46,230.0	N/A
GDP Per Capita ($)	18,782.0	20,813.0	21,746.0	22,000*
Inflation	4.0%	5.0%	4.8%	6.0%*
Average Unemployment	7.8%	7.5%	8.1%	10.3%*
Official International Reserves ($ billions)	16.2	16.8	18.6	16.9
Exchange Rate (1US$=C$)	1.23	1.18	1.17	1.15*
Industrial Product Price Index (1986=100)	107.3	109.0	109.7	N/A
Canadian World Exports($ billions)	111.2	116.7	125.2	141.8*
Canadian World Imports($ billions)	103.3	112.8	115.9	139.8*

3. U.S.-Canada Trade ($ billions)

	1988	1989	1990	1991
MERCHANDISE:				
U.S. Exports	71.6	78.8	83.7	85.1
U.S. Imports	81.4	87.9	91.4	91.1
TOTAL	153.0	166.7	175.1	176.2
BALANCE	-9.8	-9.1	-7.7	-6.0

	1988	1989	1990	1991
SERVICES:				
U.S. Receipts	9.9	11.2	12.8	14.8
U.S. Payments	7.7	7.7	7.4	6.5
TOTAL	17.6	18.9	20.2	21.3
BALANCE	2.2	3.5	5.4	8.3
GOODS AND SERVICES:				
TOTAL	170.6	185.6	195.5	197.5
BALANCE	-7.6	-5.6	-2.1	2.3
PRIVATE RECEIPTS ON U.S. ASSETS IN CANADA:				
U.S. Receipts	15.8	14.9	12.3	11.3
U.S. Payments	3.7	3.6	4.4	2.5
TOTAL	19.5	18.5	16.7	13.8
BALANCE	12.1	11.3	7.9	8.8
GOODS, SERVICES, AND PRIVATE RECEIPTS ON U.S. ASSETS IN CANADA:				
U.S. Exports/Receipts	97.3	104.9	109.0	111.2
U.S. Imports/Payments	92.8	99.2	103.2	100.1
TOTAL	190.1	204.1	212.2	211.3
BALANCE (Current Account)	4.5	5.7	5.8	11.1

4. **Foreign Direct Investment ($ billions)**

U.S. Direct Investment in Canada	61.0	63.0	71.0	71.3*
Canadian Direct Investment in the United States	27.0	30.0	33.0	N/A

5. **Best U.S. Export Prospects** (top ten)

Computers and peripherals; auto parts and accessories; telecommunications equipment; building materials and supplies; trucks, trailors and buses; aircraft and parts; plastic materials and resins; construction machinery and parts; electronic components; analytical and scientific instruments.

6. **Canada-Mexico Merchandise Trade (U.S. $ millions)**

	1987	1988	1989	1990
Canada exports to Mexico	399	406	527	507
Canada imports from Mexico	876	1,079	1,443	1,479
TOTAL	1,275	1,485	1,970	1,986
Canada's Balance	(477)	(673)	(916)	(972)

SOURCES:

Survey of Current Business, U.S. Department of Commerce.

U.S. Foreign Trade Update, U.S. Department of Commerce.

Exports/Imports by Country, Statistics Canada.

*U.S. Embassy Estimates.

CANADIAN IMPORTS FROM MICHIGAN
TOP 15 H.S. CHAPTERS, 1990

HS2 DESCRIPTION	$ CDN
Total	15,863,236,954
Vehicles o/t railw/tramw roll-stock, pts & accessories	8,974,046,184
Nuclear reactors, boilers, mchy & mech appliances; parts	2,883,365,711
Electrical mchy equip parts thereof; sound recorder etc	1,192,483,988
Articles of iron or steel	284,326,814
Optical, photo, cine, meas, checking, precision, etc	260,824,129
Mineral fuels, oils & product of their distillation; etc	239,393,324
Furniture; bedding, mattress, matt support, cushion etc	197,855,234
Iron and steel	194,168,617
Glass and glassware	180,841,394
Plastics and articles thereof	154,736,247
Miscellaneous articles of base metal	121,182,259
Paper & paperboard; art of paper pulp, paper/paperboard	84,565,327
Rubber and articles thereof	80,344,652
Special Transaction - Trade	75,465,456
Tool, implement, cutlery, spoon & fork, of base met etc	65,852,028

CANADIAN DOMESTIC EXPORTS TO MICHIGAN
TOP 15 H.S. CHAPTERS, 1990

HS2 DESCRIPTION	$ CDN
Total	31,714,322,358
Vehicles o/t railw/tramw roll-stock, pts & accessories	24,377,273,923
Nuclear reactors, boilers, mchy & mech appliances; parts	2,544,171,203
Mineral fuels, oils & product of their distillation; etc	585,385,829
Furniture; bedding, mattress, matt support, cushion etc	543,540,889
Electrical mchy equip parts thereof; sound recorder etc	463,574,716
Paper & paperboard; art of paper pulp, paper/paperboard	390,610,086
Articles of iron or steel	346,538,409
Pulp of wood/of other fibrous cellulosic mat; waste etc	338,356,078
Iron and steel	293,879,133
Wood and articles of wood; wood charcoal	261,751,303
Plastics and articles thereof	153,677,785
Railw/tramw locom, rolling-stock & parts thereof; etc	131,443,709
Glass and glassware	124,146,966
Optical, photo, cine, meas, checking, precision, etc	114,716,383
Rubber and articles thereof	96,548,109

Cash for clunkers

THE WHITE HOUSE

(Office of the Press Secretary)

For Immediate Release **March 18, 1992**

STATEMENT BY THE PRESIDENT

I am today announcing a series of steps that will help clean up air pollution in this country and, at the same time, will promote jobs by reducing regulatory costs to automobile companies and other major transportation industries.

One of these steps -- our "Cash-for-Clunkers" program -- will allow states and industries to buy old, high-polluting cars, take them off the road, and use the resulting pollutant reductions to satisfy federal clean air standards. This is just one example of the innovative, market-based approaches to pollution reduction that have been pioneered by our Environmental Protection Agency. The result is a cleaner, healthier environment and a more competitive economy.

These and other regulatory changes being announced today should provide major benefits to the economy.

# # #

You can't drive a car with your foot always on the brake, says Giddings & Lewis' Bill Fife. Same goes for running a company.

Give it the gas

By Tatiana Pouschine

"MANY COMPANIES have become so used to putting on the brakes that they have forgotten where the accelerator is," says William Fife, who seems to know exactly which pedals are where.

Fife, 54, is chairman and chief executive of Giddings & Lewis, Inc., the machine toolmaker based in tiny Fond du Lac, Wis. While by no means profligate—he works out of a modest office overlooking the corporate parking lot—Fife aggressively reinvests in his company's future. Expenses for research and development hit 10% of sales last year, compared with an average of 3% for American industry as a whole. Add to that the company's capital spending—3% of sales, on average, since Fife took the top job in 1987. That was two years before the company was spun off in a public offering by Canadian manufacturer AMCA International.

Fife's spending and the overall resurgence of U.S. manufacturing have brought impressive results. Between 1987 and 1990 Giddings' sales doubled, to $242 million from $125 million. Earnings reached $20 million ($1.85 a share) last year, or 8% of sales. In comparison, sales at two of Giddings & Lewis' main U.S. competitors, Cross & Trecker and Cincinnati Milacron, have stayed virtually flat since 1988; both companies lost money last year. Analysts believe Giddings & Lewis' earnings will approach $2 a share this year.

Now Fife is making one of the biggest expenditures of his career. In June he announced that Giddings & Lewis will pay over $70 million for Cross & Trecker, a Bloomfield Hills, Mich.-based toolmaker that lost $8 million last year on sales of $431 million. Cross & Trecker has reacted favorably to the proposal; its shareholders will vote on the matter next month. Anticipating a marriage, investors have bid up Cross & Trecker's shares to $5.50 from roughly $3 a



Photographs by David Carter

William Fife, chief executive of Giddings & Lewis, and his new 126-foot-long planer mill

He's not afraid to think big.

GIDDINGS & LEWIS®

GIDDINGS & LEWIS, INC.
142 DOTY STREET, P.O. BOX 590, FOND DU LAC, WI 54936-0590 U.S.A.
TEL. (414) 921-9400, EASYLINK 62956183, FAX (414) 929-4522

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The Boston Globe

Josh Bolton in Colio's

November 26, 1991, Tuesday, City Edition

SECTION: NATIONAL/FOREIGN; Pg. 1

LENGTH: 2513 words

HEADLINE: For Japan and the US, a reversal of fortune;
50 YEARS LATER Last of three parts

BYLINE: By Peter G. Gosselin, Globe Staff

DATELINE: WASHINGTON

KEYWORD: SERIES JAPAN US COMPARISON TECHNOLOGY STATISTIC RETAIL

BODY:

Sitting in his austere office off Washington's Embassy Row, Hiroshi Hirabayashi, Japan's economic affairs minister here, tries to explain the state of economic play between his country and the United States. He dutifully cites American technological achievement, professes deep respect for his host nation, and then gets down to business.

"You have no self-confidence in your innovating power," he says.

These days, most talk of US-Japanese relations begins and ends with such remarks. Beyond details of trade policy and chip technology, competition between the two countries seems to many to be a question of character.

4th largest in the world

"It's their whole culture of family. It means 'Buy Japanese,' " said William J. Fife Jr., chairman of Giddings & Lewis Inc. of Fond du Lac, Wis., the nation's largest machine tool maker. The company has been trying to sell its machines in Japan for 20 years with almost no success.

Whether such sentiments explain much, they are still a powerful gauge of how far matters have come in the 50 years since the United States and Japan went to war. What is remarkable is not simply that the United States, so dominant at war's end that it produced almost half the world's output, now makes only one-fifth. Nor that Japan, so prostrate it could produce only $ 200 worth of output per citizen, now produces more than any other nation, at $ 24,000.

Rather, what is riveting is that Japan's success in lifting itself up - especially in the last decade - has come through preeminence in the very high-technology fields that Americans have long considered their new frontier. And what is unsettling is that Japanese competition is playing, in the words of former Defense Secretary Harold Brown, to "the defects of American virtue." George M. C. Fisher, chairman of Motorola Inc., said he realized that the long US dominance in high technology was coming unsprung when, as manager of Motorola's telephone paging division in 1981, he sought to break into the Japanese market.

At the time, the markets for paging and virtually everything else high-tech belonged to the United States. Motorola alone sold half of the world's pagers.

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US companies had more than 60 percent of the world market, and well over 80 percent of the US market, for semiconductors and computers. Exotic areas such as biotechnology, lasers and advanced materials were the private preserve of Americans.

But such figures were cold comfort when Nippon Telegraph & Telephone told Fisher what Motorola had to produce to compete with Japanese goods: pagers that would last 20 years. At the time, the company thought it was leading the world by building them to last five.

"We thought they were trying to keep us out," said Fisher, who is 51 years old. "The requirements were unbelievable." Unbelieveable until Motorola got some Japanese-made pagers and tested them. "They did what they said they were going to do," making pagers to last two decades, said Emory A. Wakat, an executive with the company's paging division.

To keep up with Japanese competitors, Motorola was forced to revamp its entire product line. Other US companies did not move as quickly.

By the time Fisher was getting his technological comeuppance in the early 1980s, Japan was already the world's second-largest economy, behind the United States. Most of its growth had come from making and exporting consumer goods. Although its successes drew howls of protest from US textile, steel and auto makers, most Americans still accepted the successes with an equanimity that surprised even the Japanese.

In part, this acceptance was because for most of the post-war period Washington had gone out of its way to foster Japan's recovery, pumping in the current equivalent of more than $ 10 billion to make sure it happened. In part, it was also because whatever discomfort they produced, early Japanese successes seemed to fit American beliefs about how the world worked. They seemed to be clearing the way for the United States to advance into new areas. This cannot be said about its recent ventures into high technology.

"In the past, there was always somewhere else to go. If we lost textiles, there was steel. If we lost steel, there were computers," said Daniel F. Burton, executive vice president of the Council on Competitiveness, a Washington-based group that wants the government to take a more active role in improving and promoting US business. But now, he said, there is nowhere else to go. "At some point an economy has got to draw a line in the sand and say 'By God, that's important.' "

Increasingly, the United States is drawing the line at the far reaches of technology. So, for very different reasons, is Japan.

While Americans feel increasingly vulnerable to Japanese competition, they have got nothing up on the Japanese. Japan has a history of feeling vulnerable that is virtually unmatched among nations and largely unallayed by economic success. In fact, some analysts argue that Japan's sense of being threatened is what drives its technology race with the United States.

"It's the 'Japan-is-a-small-island-trading-nation-precariously-dependent-on-imported-raw-materials-cut-adrift-iview," said Richard J. Samuels, director of the Massachusetts Institute of Technology's Japan program, which trains American

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scientists and engineers to work in Japan.

"It doesn't matter what the facts are," said Samuels, who is now on leave in Toyko. "It's a view, an ideology, a justification for mobilizing and sacrificing."

Given such an outlook, a clash between the United States and Japan over high technology was probably inevitable. But its timing and dimensions were influenced by something outside the realm of technical wizardry: the energy crisis of the 1970s.

The climb in oil prices was a rude awakening for a nation with huge industrial operations but virtually no fuel of its own to power them. Japan scrambled to find new products that would be high in value but would require little energy to produce. Among its early choices was semiconductors, the minuscule chips of circuitry that are the guts of all computers and that were once the exclusive domain of US producers.

To many, the US semiconductor industry represents the very best and worst in American business. It has had none of the top-heavy management and rigid unions often blamed for choking the American steel and auto industries. For most of the last three decades, it has been fabulously inventive and tremendously entrepreneurial. It is also fragmented, unstable and ruinously competitive.

"Along with computers, it's been the high-tech equivalent of the Wild West," said Kenneth Flamm, a Brookings Institution specialist on the history and economics of high technology industries.

Although the industry emerged from inventions at the mammoth Bell Telephone labs, its fragmented pattern was set in the 1950s, when the United States did what might seem crazy by later Japanese standards: It sued AT&T for antitrust violations and forced it to license out its patents.

The telephone giant was replaced by dozens, then hundreds, of tiny start-up firms that stole one another's employees, tumbled out a flood of inventions and, more often than not, collapsed after a few years.

Such chaotic arrangements were tolerable as long as the industry had a big customer, which it found for years in the US military. The arrangements were encouraged by US tax laws that in many ways made it cheaper to start a company than to keep it going. And they fit the predilection of most American engineers and inventors.

"It's one of the defects of our virtue that we think technology is so great we're often hypnotized by our virtuosity and forget about the market," Brown said. The oversight has proven costly.

While US firms have shown little concern about the market for its products, Japan has shown plenty. It protected its home market with quotas and tariffs, driving the foreign, principally American, share of Japanese semiconductor sales from a high of 40 percent in the mid-1970s to only 12 percent by the mid-1980s, according to US government and industry figures.

While American firms were bent on devising exotic new devices, their Japanese counterparts focused on how to manufacture routine ones. As a result, by the

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late 1980s they had captured not only more than 80 percent of the world market for the most heavily used chips but more than one-third of the market for the machines that make them.

And rather than seek to drive big firms away from the new industry, as the United States had done with the telephone company, Japan sought to attract and organize them, primarily to avert the competitive turmoil that is the hallmark of American business.

"The Japanese call it 'excessive competition,' " Samuels said. "In US terms, that's oxymoronic. There can't be too much competition because competition is always thought to benefit the consumer" by raising supply and lowering prices.

But, he added, "the Japanese economy is built for producers, not consumers." And produce they did.

By last year, the United States and Japan had traded places in semiconductors. American companies, which started the 1980s with more than half of the world's market, ended the decade with about 35 percent, according to figures from Dataquest, a California market research firm. Japanese firms, which started with less than 30 percent, ended with more than half.

Such numbers have spawned a cottage industry of critics and analysts, especially in Washington. Some say the figures paint too stark a picture of US loss. Flamm argues, for example, that American semiconductor companies retain their grip on the market for custom-designed chips, where future advances are most likely to occur. But others insist that the numbers are only the beginning of the story.

A flurry of recent studies show American industry lagging behind in a long list of technologies said to be critical for preserving US economic health. New figures from the US Patent office show that the top four recipients of US patents last year were Japanese companies.

Wherever things are headed, the pace of change has been so fast that it has flipped the two countries' perceptions of each other. Recent Japanese polls show that Japanese consumers cannot imagine what US goods they would want to buy because most are so shoddy. A poll released last week in Washington asked 1,000 Americans which country was economically stronger: 77 percent said Japan.

The same US poll showed that more than half of those questioned think Japan has been competing unfairly with the United States. The US government has often thought so, too, and has devoted considerable effort to doing something about it, with only limited success.

For the most part, the United States has tried two tacks in the last decade: changing the trade rules and changing Japan. Neither has worked particularly well.

After years of complaints that Japan was dumping semiconductors for below cost to drive American chip makers out of business, the government worked out a trade agreement in 1986 that, among other things, set minimum prices for Japanese semiconductors. In retrospect, even the US official who negotiated the deal concedes that the arrangement did not produce the expected results.

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"It does show the limitations to managing trade with Japan," said S. Linn Williams, who recently stepped down as deputy US trade representative. "You are always hurting someone, and it's never entirely clear that you're e of advanced computer screen that is not made in the United States but that US computer makers say they will have to use to remain competitive. Congressional leaders are preparing a tough new bill to restrict Japanese auto imports, and the administration is girding for a trade fight over a long list of other products in time for next fall's election. US attempts to open Japanese markets to more US goods by fundamentally changing Japan from a producer- to a consumer-oriented economy have been even more audacious. The efforts have not produced the desired results. But in making it acceptable to meddle in affairs previously considered nobody else's business, they have helped unleash harsh Japanese criticism of the United States, and a little self-criticism as well.

Washington never takes self-criticism straight, and these days most of it is couched as "technology policy." Think tanks, industry groups and even the Pentagon are churning out proposals for supporting "generic technologies" to protect the country and boost its economy. For advocates, the only problem is that the talk stops dead at the White House.

Both the Bush and Reagan administrations have gone along with a few innovations. For instance, they have helped modify antitrust laws to let US semiconductor makers join a research consortium aimed at helping the industry compete with Japan, and they have permitted some federal funds to be used for the venture.

But when the head of the Pentagon's Defense Advanced Research Projects Agency, seen by many as the fountainhead of American high technology, tried to invest government money in a small California start-up company that was about to be purchased by the Japanese last year, he was yanked from his job for going against administration ideology.

Instead, the administration has boosted federal funds for research and aggressively sought Japanese money to supplement US spending. It is currently lobbying Japan to help salvage plans for an $ 8.4 billion superconducting supercollider, a device to test basic theories of matter that is likely to prove the most expensive science experiment in US history.

Critics charge that in focusing on basic research, the administration misses the point of Japanese competition: The United States has always excelled in making discoveries but has fallen behind in turning them into products. Although the critics predict events will ultimately force White House officials to change, they bemoan the country's inability to agree on what to do.

"There's a great reluctance, in fact an aversion, to really acknowledge the challenge we face in Japan," said Sen. Jeff Bingaman, a New Mexico Democrat and a leading technology policy advocate. "We can't even agree on what the problem is."

Without agreement, Americans are forced back to the question of character. And for many, the experience of having their character held up to them is disorienting. Yet for Japanese, and some Americans, that may be the crux of the matter.

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The Boston Globe, November 26, 1991

When asked what strengths and weaknesses he thinks the United States and Japan bring to their technology competition, Hirabayashi the economic affairs minister at the Japanese Embassy, leans back in his chair and tugs at his vest. He cites a list of similarities between the two countries, mentioning one in particular: the Protestant work ethic.

"Maybe you have lost some of that," he suggests.

Tech wars: the battle for US markets

A comparison of US and Japanese companies' share of total sales in the United States in key industries. In percent of total sales.

GRAPHIC: PHOTO CHART, 1. AFP PHOTO / US Trade Representative Carla Hills met with Japanese Foreign Minister Michio Watanabe this month in Tokyo. 2.GLOBE PHOTO/PAM BERRY / Surrounded by Japanese products, Troy Smith tries out a Casio keyboard at Lechmere. 3. GLOBE PHOTO/PAM BERRY / Joy Bruskin tests a Sony video camcorder while her image is projected on a Sony monitor as captured on a Panasonic video camera in the Lechmere store at the Cambridgeside Mall.

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51ST STORY of Level 1 printed in FULL format.

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November 11, 1991, Monday

DISTRIBUTION: Business Editors

LENGTH: 613 words

HEADLINE: Giddings & Lewis discusses Voluntary Restraints Agreements with Trade Representative Carla Hills

DATELINE: FOND DO LAC, Wis.

BODY:

November 11, 1991 -- John Townsend, Vice President, Marketing, Giddings & Lewis, Inc., joined an industrial automation and machine tool delegation in Washington, D.C., to discuss issues surrounding the extension of the Voluntary Restraint Agreements (VRAs) with U.S. Trade Representative Carla A. Hills.

Giddings & Lewis, the largest manufacturer of industrial automation and machine tools in North America and the fourth largest in the world with sales exceeding $600 million, is working closely with the Association of Manufacturing Technology and other machine tool makers to extend the VRAs which are due to expire at the end of 1991.

The delegation told Hills that a vibrant domestic industrial automation and machine tool industry is essential to the nation's national security and is the heart of the American industrial infrastructure. They said the American government has provided very little support for the industry that provides machines that are the basis for all manufacturing. Like most American industries, machine tool companies have not sought government assistance, except in the extension of the VRAs.

Townsend told Hills that many American machine tool companies, especially Giddings & Lewis, are vertically integrated and offer a full line of products and services as compared to some companies that import components and assemble in the United States.

''More-value-added in the manufacturing process creates more jobs for the American workforce,'' says Townsend. ''To lose the VRAs at a time when the machine tool industry has begun to rebound and reinvigorate itself would not be healthy for our economy and would jeopardize our national security. The import share of machines covered by the VRAs has declined from 59 percent in 1986 to 47 percent in 1990. And people on the factory floor have made that happen.''

Representatives from Giddings & Lewis, Cincinnati Milacron and Strippit, Inc. told Hills that Japan's markets are hermetically sealed. Japanese imports of machine tools only account for 8 percent of the consumption and well below the worldwide average of 42 percent.

Furthermore, this imbalance of trade is illustrated by the fact that Japan exported about $1.1 billion of machine tools to the United States in 1990 while the United States exported only about $84 million to Japan.

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(c) 1991 Business Wire, November 11, 1991

Townsend also told Hills that '' Giddings & Lewis has not exported a major machine tool to Japan since 1974 and there has been a definite downward trend in imports as a percentage of Japanese machine tool consumption.'' The delegation told Hills if the VRAs are not extended, the floodgates of imports will be opened, jeopardizing American jobs and the ability to supply advanced manufacturing technology critical for national security. Townsend and his colleagues strongly urged the administration to continue negotiations to open the hermetically-sealed Japanese markets.

Giddings & Lewis, Inc., headquarterd in Fond du Lac, WI, is a world-class manufacturer of industrial automation products including flexible manufacturing and automated assembly systems, high-precision automated machine tools and measuring equipment and related products and services. The company's stock is traded on the NASDAQ National Market System under the symbol GIDL. Other operations are in Janesville, West Allis and Butler, WI; Fraser, Warren and Menominee, MI; Round Lake Beach, IL; Dayton, Solon and Lima, OH; Windsor, Ontario; Arbroath, Scotland; Knowsley, England and Wendlingen, Germany.

CONTACT: Giddings & Lewis, Inc., Fond du Lac
Christine Miller, 414/929-4314

ORGANIZATION: GIDDINGS-&-LEWIS -1

TICKER-SYMBOL: GIDL

GEOGRAPHIC: WISCONSIN

INDUSTRY: MANUFACTURING AUTOMOTIVE

Ask only for a level playing field

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7TH STORY of Level 2 printed in FULL format.

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Daily Report For Executives

November 14, 1991, Thursday

SECTION: REGULATION, ECONOMICS AND LAW; DER No. 220; PG. A-7

LENGTH: 517 words

HEADLINE: International Trade, MACHINE TOOL COMPANIES URGE BUSH TO EXTEND VRAs WITH JAPAN, TAIWAN

BODY:

A coalition of leading U.S. machine tool manufacturers urged the Bush administration Nov. 13 to renew for another five years agreements scheduled to expire at the end of this year limiting machine-tool imports from Japan and Taiwan.

The administration is expected to announce a decision on the issue by the end of this month.

''More time is needed to complete the industry's return to health,'' according to Wade H. Roberts Jr., president of Strippit Inc. of Akron, N.Y., a member of the Association For Manufacturing Technology, which organized a news conference to promote an extension of the agreements.

The 325-member association has said that the failure of President Bush to extend the so-called voluntary restraint agreements with Japan and Taiwan would threaten U.S. security interests by undermining the machine tool industry.

John Townsend, president of Giddings & Lewis Inc. of Fond du Lac, Wis., said that despite the strides made by the U.S. machine tool industry since the VRAs were enacted in 1987, the industry's hold on market shares is tentative at best.

Townsend told reporters that Japanese machine tool companies, which account for about half of U.S. machine tool imports, have suffered a fall in orders during the first nine months of this year. ''If the machine tool VRAs are not extended,'' he said, ''it is likely they will target the U.S. market as the best place to find additional sources of machine tool orders.''

The VRAs, which affect about 40 percent of the industry's output, allow up to 48 percent of the affected U.S. machine tool market to be controlled by foreign competitors.

Sen. Donald W. Riegle Jr. (D-Mich), chairman of the Senate Banking Committee, said that the VRAs have been credited with halting the industry's slide in recent years, but that its health has not been restored. Profits last year were a low 2.2 percent, he said, and market share, while stabilized, has not grown substantially.

''The VRAs have worked precisely how we intended,'' Riegle said in a written statement distributed at the news conference. ''The industry has built capital, increased reinvestment by nearly 80 percent, and raised research and development spending by over 20 percent. We need to extend the VRAs to allow the industry

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to complete the recovery process.''

Riegle cited findings by the congressional Office of Technology Assessment that eight of 22 industries critical to national defense depend on machine tools, which include lathes, milling machines, and punching machines.

Sen. Alfonse M. D'Amato (R-NY), speaking at the news conference, said that he plans to introduce a sense-of-the-Senate resolution soon, co-sponsored by at least 14 other senators, supporting a five-year extension of the VRAs.

''This is an issue of national security,'' he said.

D'Amato is among 28 senators who have sent letters to President Bush requesting an extension, according to the Association of Manufacturing Technology, which also said that more than 140 members of the House have sent similar letters.

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41ST STORY of Level 1 printed in FULL format.

Copyright (c) 1991 Business Wire Inc.;
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December 9, 1991, Monday

DISTRIBUTION: Business Editors

LENGTH: 514 words

HEADLINE: Giddings & Lewis calls for industry, government and academia partnerships to advance American manufacturing

DATELINE: FOND DU LAC, Wis.

BODY:

December 9, 1991 -- William J. Fife, Jr., Chairman and Chief Executive Officer of Giddings & Lewis, Inc., challenged members of the National Coalition for Advanced Manufacturing ''to color outside the lines'' when creating partnerships to establish intelligent national policies for manufacturing.

Mr. Fife, whose company is the largest North American industrial automation and machine tool manufacturer and the fourth largest in the world with sales exceeding $600 million, told the group of industrialists, government leaders and educators that our nation must maintain a strong manufacturing infrastructure if we are to gain leadership in the global manufacturing world.

Fife noted that a strong domestic industrial automation and machine tool industry is essential to support manufacturing progress. While the worldwide industry is ''borderless'', with imports representing more than 40 percent of global shipments, developed nations typically offer some form of government support of the local industrial automation and machine tool producers because of the importance of this industry to a country's economic growth.

For this reason, Fife called for an extension of the Voluntary Restraint Agreements which expire on December 31, 1991.

''We need for our academic and government policy makers to understand the rest of the world competes differently and views fairness differently than we do,'' Fife said. ''As a result, we need to restrain the flood of imported machine tools into our country until an equal playing field has been established.''

Fife outlined a four point action program to ensure the long-term viability of American manufacturing. He cited a need for smart capital investment, improved technical education, advancement of new technologies and increased partnerships between industry and government in this plan.

The manufacturing chief executive officer also announced a pilot professor internship program to encourage a university manufacturing faculty member to spend a summer at one of Giddings & Lewis' facilities exploring a specific Giddings & Lewis research topic.

''Our people can learn about the latest manufacturing theories and we can offer suggestions about what is needed in today's manufacturing curriculum,''

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(c) 1991 Business Wire, December 9, 1991

said Fife. ''Likewise, the professor has access to the factory floor and the rich resources of manufacturing professionals.''

Giddings & Lewis, Inc., is a world-class manufacturer of industrial automation systems and a leader in manufacturing technology creativity. The company is headquartered in Fond du Lac, WI and has manufacturing facilities in Janesville, West Allis and Butler, WI; Fraser, Warren and Menominee, MI; Round Lake Beach, IL; Dayton, Solon and Lima, OH; Windsor, Ontario, Canada; Arbroath, Scotland; Knowsley, England and Wendlingen, Germany. The company's stock is traded on the NASDAQ National Market System under the symbol GIDL.

CONTACT: Giddings & Lewis, Inc., Fond du Lac
Christine M. Miller, 414/929-4314

ORGANIZATION: GIDDINGS-&-LEWIS

TICKER-SYMBOL: GIDL

GEOGRAPHIC: WISCONSIN MICHIGAN ILLINOIS OHIO

INDUSTRY: MANUFACTURING

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34TH STORY of Level 1 printed in FULL format.

The Associated Press

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January 7, 1992, Tuesday, AM cycle

SECTION: Business News

LENGTH: 692 words

HEADLINE: Bush Seeks To Protect U.S. Machine Tools While Fighting Japanese Barriers

BYLINE: By KEN KUSMER, AP Business Writer

DATELINE: INDIANAPOLIS

KEYWORD: Bush-Machine Tools

BODY:

At a time when he is trying to eliminate trade barriers for U.S. goods in Japan, President Bush wants to extend restrictions on Japanese and Taiwanese exports of machine tools to the United States.

It's a move that presumably would save American jobs during an election year. But critics say it also would undercut the U.S. position in global trade negotiations and impede the recovery of automakers and other manufacturers by artificially propping up the price of machine tools.

"It's a minus factor, and another burden the auto industry shouldn't have to carry," said Sen. Richard G. Lugar, R-Ind., who's lobbied against the foreign machine-tool restrictions.

On the eve of Bush's current Pacific Rim tour, the administration said it would negotiate with Japan and Taiwan to extend a voluntary restraint agreement, or VRA, in which those nations agreed to limit exports of lathes, milling and punching machines and other tools used in the production of automobiles, appliances and other goods.

Machine tools also are used by the defense industry, and the administration cited national security concerns when it announced Dec. 27 that it wanted a 30-day extension of the VRA that expired Dec. 31.

That gives U.S. Trade Representative Carla Hills time to negotiate a two-year phaseout of restrictions that remain on computer-controlled machine tools.

An industry group, the National Machine Tool Builders Association, sought a three-to-five-year extension of the original VRA.

Jim Mack, vice president for government relations for McLean, Va.-based group, said allowing imports more than the 35 percent U.S. market share they now have threatens the superior U.S. military technology shown in the Gulf War.

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If imports squeezed out U.S. producers, the nation then would depend on foreign manufacturers for a critical component in the defense industry, Mack said.

Studies show that if the VRA expired, an immediate 15 percent jump in machine tool imports and a price war would ensue, Mack said. Japanese and Taiwanese manufacturers could easily regain the 80 percent market share they held before the VRA, he said.

"The American companies, because of their fragile state, would not have been able to compete in a meaningful way in a price war," Mack said.

More layoffs by American machine tool builders likely would result, Mack said. Production employment among the NMTBA's 329 member companies fell from 41,000 during 1990 to an average of 36,200 for the first nine months of 1991.

"Nobody's making any money. When you get into a recession, customers don't invest as heavily in capital equipment as they normally would. The auto sector is not buying as many machine tools as they normally would," Mack said.

The machine tool group considers the VRA "a national security issue, not a trade issue," Mack said. Producers such as Wisconsin-based Giddings & Lewis and Cincinnati Milacron make tools used in the production of Tomahawk cruise missiles, SCUD-busting Patriot missiles and other weapons.

An Indianapolis-based machine tool maker, Hurco Companies Inc., had lobbied against a VRA extension, saying it would have the reverse effect of hurting American companies that are trying to compete globally at a time when U.S. exports are carrying the economy.

Hurco specializes in computer numerical controls for machine tools and holds about a 20 percent market share in the United States, compared with about 60 percent for leader Fanuc Ltd. of Japan. The VRA does not cover computer numerical controls, but affects the iron components Hurco purchases to place its controls on.

Hurco hasn't reacted to the decision to seek a VRA extension. "We're not giving our response right now until we a get a measure of how this will affect the industry," said Hurco spokeswoman Dietra Rosenkoetter.

Hurco had enlisted Lugar to use his influence with the White House in trying to defeat an extension.

"We ought to be stopping voluntary restraint agreements when we have American competitors who are willing to compete internationally," Lugar said. "The only jobs that are going to be saved are in much more inefficient machine tool companies."

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17TH STORY of Level 1 printed in FULL format.

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Financial Times

February 13, 1992, Thursday

SECTION: SECTION I; International Companies & Finance; Pg. 26

LENGTH: 213 words

HEADLINE: Record sales at largest US tool manufacturer

BYLINE: ANDREW BAXTER

BODY:

GIDDINGS & LEWIS, the largest US machine tool maker, yesterday reported its highest sales and earnings since it went public in 1989, due to continued strong demand for its industrial automation systems.

G & L, which took over its struggling rival Cross & Trecker late last year, raised operating net earnings from Dollars 18.4m, or Dollars 1.73 a share, in 1990 to Dollars 21.3m, or Dollars 1.84, last year. The figures include Cross & Trecker from October 31, but exclude tax credits of 6 cents and 12 cents a share in 1991 and 1990 respectively.

Fourth-quarter operating net earnings rose from Dollars 4.75m to Dollars 6.3m, but earnings per share fell from 45 to 43 cents on increased shares outstanding. Revenues jumped from Dollars 66m to Dollars 131.1m for the quarter, and from Dollars 243m to Dollars 326.6m for the year.

The company reported record bookings of Dollars 203.7m in the fourth quarter, up from Dollars 70.9m a year earlier. Mr William Fife, chairman and chief executive, said quotations for new equipment had picked up well since the acquisition.

The deal turned Giddings & Lewis into the world's fourth biggest machine tool producer, and was aimed partly at expanding the company's presence in continental Europe, where C & T was stronger.

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8TH STORY of Level 1 printed in FULL format.

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Money

March, 1992

SECTION: INVESTING; Pg. 130

LENGTH: 1666 words

HEADLINE: WHAT TO BUY NOW FOR THE ECONOMIC RECOVERY

BYLINE: BY WALTER L. UPDEGRAVE

BODY:

brace yourself for a major change in leadership in '92. No we're not referring to the upcoming presidential election, but to a fundamental shift in the stock market that could carry the Dow industrials to unprecedentged highs this year -- possibly to 3400 or higher. The shift will occur as the long-awaited recovery kicks in -- probably by midyear at the latest, thanks to today's ultra low interest rates. Consumer-oriented growth stocks that led the bull market of the '80s will give way to new champions, namely the shares of industrial and other cyclical businesses.

The reason for this change: consumer stocks had a rousing run before and during the recession with gains of 40% to 50%, and that has left their prices even more inflated than the campaign rhetoric you'll hear between now and November. Value-conscious investors will therefore have to focus increasingly on depressed cyclical stocks. Says John Gunn, director of research for the investment firm Dodge & Cox: "If the economy does anything at all, these are the stocks that could post the largest gains."

Simply buying a handful of cyclicals is far from foolproof, though. Economists expect a sluggish recovery with annual growth of only 2.5% to 3%, compared with 6% or more in previous rebounds. That may leave some cyclicals languishing, such as paper and chemical stocks that need a robust economy to allow them to raise product prices. What's more, you may already have missed the big moves in some cyclical stocks. For instance, interest-rate-sensitive home builders, such as the Ryland Group, have jumped 50% or more since the Federal Reserve slashed the discount rate to a 27-year low of 3.5%.

Given these pitfalls, what are the best ways to profit from the rebound? One is to target lagging cyclicals -- stocks that usually surge later in a recovery, such as companies that produce equipment designed to improve manufacturing productivity. Investors should also look at growth cyclicals, such as technology and bank stocks, whose earnings would take off in the initial stages of a recovery and then continue to grow. Finally, this is an ideal time to go bottom fishing in depressed market sectors, such as comatose media stocks.

Here you'll find four types of businesses discussed with two top choices in each area. If you prefer mutual funds -- and you probably should unless you have a diversified portfolio of at least $ 20,000 or more -- the box above recommends six funds that can ride the recovery.

* Companies that will improve productivity on the factory floor. With the labor force expected to grow only 1.3% in the '90s, vs. 2.5% in the '80s, U.S. manufacturers will have to raise productivity to boost profits. "The focus

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will be on capital spending that squeezes more efficiency out of the factory you've already got," says Alexander Paris, an analyst with Barrington Research Associates. Indeed, according to a December survey by the U.S. Department of Commerce, businesses plan to increase their capital spending 5.4% this year to an estimated $ 559 billion.

One key area for such spending will be the stalling U.S. auto industry. Paris points to two midwestern machine tool and engineering companies -- Giddings & Lewis (recently traded over the counter at $ 39 a share) and Newcor (OTC, $ 12.50) -- whose sales and profits could soar from renewed capital spending.

Despite its small size ($ 270 million in sales), Giddings & Lewis is one of the premier producers of high-speed factory production systems used to assemble engines and transmissions. That business will provide about half the company's revenues and profits over the next few years. Though Giddings & Lewis shares trade at a P/E of 17 times estimated 1992 earnings and have climbed 75% in the past year, Paris thinks the stock could rise almost 30% to $ 50 over the next year.

Newcor (sales of $ 97 million) is a leading producer of automated welding and assembly systems employed by appliance manufacturers such as General Electric. Paris projects that the demand for these specialized systems will increase at roughly 12% a year, or four times as fast as the overall economy. He believes Newcor, now selling at a P/E ratio of 13.2, could shoot up to $ 20 a share within the next 12 months.

* Computer companies with leading edge technology. Though hard-hit computer stocks such as IBM and Digital Equipment (down 49% and 75%, respectively, from their 1987 peaks) would get some help from a reviving economy, profits are likely to remain slim as rivals slash their prices. The real ride in technology stocks, says analyst David Soetebier at A. G. Edwards & Sons, will come from companies that deliver state-of-the-art products and software.

One company he recommends is $ 295 million Autodesk (OTC), a developer of computer-aided design software used by architects and engineers. The company's stock has been hammered from $ 47 in October to $ 27 recently after earnings for the fourth quarter came in 50% lower than analysts expected. But with a third of its software sales tied directly to the construction industry, Autodesk stands to benefit as today's low interest rates rouse the housing industry. Soetebier expects earnings to decline in the first half of 1992 but rebound sharply later this year as the economy revives and the company releases a new version of its popular AutoCad software. He figures that Autodesk's stock could easily rise 67% to $ 45 within the next 12 months.

Another technology company with hot prospects even in a lukewarm recovery is $ 555 million Analog Devices (New York Stock Exchange, $ 10.25), a manufacturer of specialized semiconductors used by industrial companies and scientific instrument makers. Soetebier estimates that one recent innovation alone -- an electronic sensor for use in auto air bags -- could increase the company's sales by a stunning $ 100 million a year, an 18.5% gain. In addition, savings from consolidating its manufacturing sites and paring the payroll by 600 employees could pump up the company's earnings from 1991's 17 a share to 80 this year. Predicts Soetebier: "If the economy does anything at all, this stock could hit $ 15 within a year."

* Banks that will gain from low interest rates and increased loan demand. A

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1992 Time Inc., Money, March, 1992

few large regional banks are ideally positioned for the increasing loan demand that will accompany the economic revovery. What's more,, if interest rates remain relatively low, as many economists expect, healthy banks will enjoy fat profit margins by maintaining loan rates far above what they pay for deposits.

Michael Metz, chief investment strategist at Oppenheimer & Co., reccommends two strong regionals: NationsBank (NYSE, $ 43.50), which has total assets of $ 100 billion, and Comerica (NYSE, $ 57), a projected $ 28 billion. Both have just undertaken large mergers (Comerica's won't be official until April) that will lower costs and expand their market shares. NationsBank in Charlortte, N.C., the merged bank resulting from NCNB's acquisition of C&S/Sovran, reported a loss of $ 244 million for the fourth quarter of last year, largely because of merger-related costs and loan chargeoffs. But by consolidating the operations of NCNB and C&S/Sovran, the bank is expected to slash overhead by 10% within the next three years. Combined with an estimated 3% in loan growth a year, says Metz, those savings could boost earnings from just 76 a share last year to $ 4.20 for 1992. He thinks that NationsBank stock, trading at a 10.4 P/E could rise as much as 38% to $ 60 a share.

Comerica in Detroit also stands to reap huge cost savings ($ 145 million a year by 1994) after merging with its Motown rival Manufacturers National. With those savings alone, plus a modest 4% increase in load demand, Metz believes Comerica stock,now at a P/E of 10.2, could easily rise 23% to $ 70 within the next year.

* Beaten-down media stocks that have strong franchises. A virtual three-year slump in newspaper and television advertising has pounded the prices of many media companies by 35% or more. To Richard Fontaine, manager of the Fontaine Capital Appreciation fund, this sad showing signals an opportunity to scoop them up before advertising revenues bounce back and share prices zoom. Fontaine notes that newspaper and television advertising will get an extra kick this year from the elections and the Olympics. His two favorite media candidates: Washington Post Co. (NYSE, $ 198.50), which has sales of $ 1.4 billion and owns the Washington Post, Newsweek magazine and four network-affiliated television stations, and the New York Times Co. (American Stock Exchange, $ 26.50), $ 1.7 billion in sales, which owns 33 small daily and weekly newspapers, Family Circle and McCall's magazines, and five TV stations, as well as the New York Times itself. Says Fontaine, "When advertisers want to reach people with money to spend, these are two of the places to do it."

Though both companies were pummeled by the recession -- the Washington Post's 91 earnings were 38% below the company's 1989 peak and the Time's profits were down 88% from their 1988 high -- Fontaine expects them to recover quickly. Reason: because of cutbacks in payroll and operating costs that both companies have made, even moderate 7% increases in revenue would flow directly to the bottom line. Fontaine estimates that the Washington Post's earnings will jump 44% this year and could almost double again within two years, carrying the stock up more than 50% to $ 300 within a year. At the New York Times, where earnings all but vanished in 1991, he expects profits to quadruple this year and then triple again within two years to $ 2.50 a share. Over the next year, he estimates conservatively that the stock could jump 50% to $ 40 a share. "Everything bad that's going to happen to these stocks has already happened," says Fontaine. "So you're assuming almost no downside risk.

GRAPHIC: Illustration, no caption, BY DAGMAR FRINTA

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March 17, 1992, Tuesday

SECTION: SECTION I; American News; Pg. 3London

LENGTH: 800 words

HEADLINE: A new industrial resilience belies Rust Belt blues;
The story of the Midwest's economy is not as bad as that of the country as a whole

BYLINE: BARBARA DURR

BODY:

IN CHICAGO recently, 9,000 people queued in a blizzard for hours to apply for 500 hotel jobs. Last month General Motors told 4,000 workers in Ypsilanti, Michigan that their plant, rather than one in Texas, would be closed. To many it feels as if the worst days of the Rust Belt are back.

It is not surprising, then, that the candidates in the presidential primaries this year have been tempted to play to the region's economic distress.

However, the story of the Midwest's economy is not in fact as bad as it is in the country as a whole.

The region has suffered less in this recession than it did in the early 1980s, said Mr David Allardice, assistant director of research at the Federal Reserve Bank of Chicago.

While the slowdown has recently begun to deepen in the Midwest, many regional analysts still say the region will pull through 1992 in better shape than the rest of the country.

In the past, the Midwest, as the industrial heartland, has tended to lag behind the nation in its economic downturn and then rebound more slowly. Analysts believe the Midwest may have fundamentally changed.

'The region has been restructuring and is in a better competitive position,' said Mr Robert Schnorbus, manufacturing analyst at the Chicago Fed. This has included retooling through more capital expenditure, reduced workforces and higher productivity.

Helped by a slimming of inventories over the past several months, the Midwest may well be able to bounce back more quickly than ever, he said.

While the General Motors' cuts, the demise of Midway Airlines and a long strike at Caterpillar have taken their toll on employment in Illinois and Michigan, the total number of jobs has edged up - 0.5 per cent between December and January - in the five-state area of Michigan, Indiana, Illinois, Iowa and Wisconsin.

One of the key boosts for the trimmer heartland since the start of the recession in July 1990 has been exports, in particular of capital goods. The

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region accounts for a large share of US capital goods production exports of which have been growing at about 10 per cent a year over the last two years, compared with total US export growth in 1991 of 7.6 per cent.

The export picture for this year has, however, been clouded by the economic slowdowns in Germany and Japan.

But, says Ms Diane Swonk, regional economist for First Chicago: 'Trade won't fall apart like some people think.' Ms Swonk believes that as long as the dollar stays relatively competitive, Mexico and other newly-industrialising countries will pick up some of the slack in exports. Capital goods demand from Canada, which alone accounts for between 40 and 50 per cent of the region's trade, would also pick up later this year, she said.

Other evidence suggests that even European markets might not be as bad as expected. At Giddings & Lewis, the largest North American maker of machine tools and assembly systems, orders shot up during the 1991 fourth quarter - and 35 per cent of them were from Europe.

The company won its first order from France in more than five years. Strong interest came from the Pacific Rim, in particular South Korea.

The real estate sector in the Midwest has not been the plague that it has in other regions, largely because commercial property was not excessively over-built - though the vacancy rate is rising in Chicago - and home values did not rise sharply as they did elsewhere.

One of the more marked differences between the region and the nation is in single-family homes. Between 1988 and 1991, single-family (detached) housing starts, an indicator of middle-class prosperity, remained almost unchanged in the Midwest while they dropped 22 per cent in the country as a whole. First Chicago expects them to rise 24 per cent in the Midwest this year.

Agriculture has recuperated from its trough in the mid-1980s and has been on a steady if unspectacular course. The US exports 20 per cent of its maize and half its wheat, the bulk of which come from the region.

Net cash farm income dropped 6 per cent last year and is expected to fall slightly again this year. But, overall, the farm sector has not had as serious a downturn as the rest of the economy.

Exports are expected to enjoy a slight increase this year, largely from more shipments of and higher prices for wheat.

Meanwhile the Midwest's old complaint that it has not won enough defence contracts has turned out to be a blessing. The wrenching shrinkage of the US defence industry will barely be felt in the region.

With respect to the Midwest's longer-term prospects, adjustment in the motor industry, some 60 per cent of which is concentrated in the region, and an increasing orientation to exports will be key, according to Mr Robert Dieli, regional economist for Northern Trust Company in Chicago.

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10TH STORY of Level 1 printed in FULL format.

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March, 1992

SECTION: Vol 9; No 4; Sec 1; pg 47

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HEADLINE: Taking on Japan

BYLINE: Cheryl Eberwein

DATELINE: Ann Arbor; MI; US

BODY:

A blueprint of a disassembled car hangs on the wall at Sensor Adaptive Machines Incorporated (SAMI), a machine vision company in Windsor. Hundreds of components float across the diagram in three-dimensional relief.

Tim Pryor, president of SAMI, walks around a long table and lightly drums his fingers against the blue-gray paper. "This," he says, "is one of the biggest problems U.S. automakers face. Look at all these parts. The problem is that car plants can only make one kind of car." Auto plants can't be retooled quickly enough to handle a variety of platforms and parts, Pryor says. But plant flexibility--retooling on a dime to build different models on the same assembly line--is the wave of the future.

Pryor gazes at the blueprint a moment longer, then grins. His company has won a $ 1 million contract from Canada's space agency to build a car using space technology.

"We're using NASA and Canadian space technology to build robots that can put a car together without an enormous number of fixed tools. They had to figure out how to build a space station without fixed tools, so we thought, 'Why not adapt that technology to industry?'"

Pryor's company has been working since 1975 on how to build an advanced kind of machine guidance vision. Now, with the technology the astronauts use, the company is close. "We think we'll have a demo by May. If we're successful, this could change a lot of industries."

Pryor is optimistic. His firm is one of a handful of area high-tech companies that managed to survive through the competitive research and development environment of the '80s.

Pryor's optimism, however, is based on more than his firm's longevity. SAMI's space car project represents a transfer of technology that was inconceivable a decade ago.

The R&D efforts of government agencies and industry have long traveled separate, parallel routes. But a change has taken place, and companies like SAMI are the beneficiaries. Antitrust laws in the U.S. have been relaxed to allow companies to work together on precompetitive technology (that is, technology

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not yet applied to a product).

This transformation is none too soon in arriving, critics and industry leaders charge. As one company official puts it, "Japan is eating Detroit's lunch," and it's time that Washington woke up to the fact that, as a result, the U.S. economy and national security are at risk.

The indifference and antagonism which once characterized government-industry relations is yielding to a sudden, almost desperate realization that the United States alone, among the world's industrial powers, has never leveraged the resources that the public and private sectors possess to achieve a cohesive R&D battle plan.

But government dollars are finally flowing into industry, most notably from a skittish Department of Defense, which has watched its focus change since Desert Storm and the Cold War's demise. Conventional military weapons, and the bucks to buy them, are being scaled back. Instead, funding is being diverted into high-tech R&D projects that will result in Star Wars fighting capability.

For a little-known organization in Ann Arbor, the National Center for Manufacturing Sciences (NCMS), this comes as no surprise. NCMS is a main conduit through which government funds are moving into industrial and technological research.

Of roughly 250 industrial consortia in the country, only the NCMS cuts across a host of industries and technological disciplines.

This year, $ 150 million in federal and member company funds will flow through the NCMS and into high-tech research projects--up from $ 20 million five years ago. By 1996, organization members expect to hit $ 450 million.

"For 40 years the U.S. has put from $ 50 billion to $ 300 billion into defense of the world, while pretty much forgetting about any support of industry," says Ernest Vahala, director of manufacturing engineering for GM's Truck and Bus Group and chairman of the NCMS Technical Review Board. "Meanwhile the vanquished--primarily Germany and Japan--have been quietly putting all their money into their industrial base."

If the U.S. had invested even 10 percent of those military support dollars into its industrial base, Vahala says, it would be unchallenged by anyone in the world today.

Whether or not NCMS and similar consortia can lead industry on a new technological charge remains to be seen. While the country generates a tremendous amount of pure research, applying that technology to industry has always been a weak link. Researchers are often out of touch with technology suppliers--those who develop the technology into a marketable machine system--and technology users.

The creation of NCMS or something like it earlier would have been a boon, many agree, because it is attempting to link all of these players--and government --in the technology process.

"It's becoming the American equivalent of MITI (the Ministry of International Trade and Industry in Japan)," Pryor declares enthusiastically. "We've never

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had anything like this before. Here I am, a little supplier, hashing out future technology with Ford and GM guys sitting on either side of me. This is powerful, powerful stuff." SAMI has been an NCMS member for two years.

Powerful or not, trying to explain exactly how NCMS works is tough, even for members of the organization. At first, it isn't always clear how a company will recoup its investment, officials say, though companies do, and usually several times over.

Simply put, NCMS is a non-profit industrial consortium of Canadian and U.S. firms set up to bring technology suppliers and users to the same table to talk. Originally conceived to save the U.S. machine tool industry from complete devastation by Asian and European imports, the organization quickly grew to encompass a range of industries.

Companies join, describe their technology needs at meetings, and jointly hash out projects to address those needs. The end result is the development of technology (or sometimes products) that members market to manufacturers. John Sheridan, director of Technology Transfer for the organization, calls this process "a strength at NCMS."

"NCMS does not do any research itself. We act as brokers between technology users and suppliers. We're the marriage makers," Sheridan says. In the process, marketing relationships often develop between members, new sources of research come to light, and everybody's R&D dollars are maximized because project costs are shared.

In reality, NCMS is more than a mere broker, and members belong for a myriad of reasons, including marketing opportunities and access to its data bases. Its stated objectives--leveraging R&D dollars, and improving members' global competitiveness--do battle with deep-rooted prejudices against cooperative research. Almost everyone acknowledges that a collective R&D effort on this scale has never before been undertaken.

Members can participate in NCMS projects in three ways, depending on their time and interest. If several members express interest in a certain technology --say the development of a new paint system that doesn't use volatile hydro-carbins--the NCMS technical review board agrees to fund a research program. The program is usually divided into several projects. Companies join TAGs, Technical Action Groups, to help design and carry out the research for a particular project. GM and Ford, for example, may both participate in the program and sit on several TAGs to make sure research addresses their interests.

Companies often volunteer to help with research they may have been developing on their own, NCMS officials say, and in-kind services such as equipment and researchers' time can be used as their financial contribution to the program.

If a company isn't interested in committing that much time to an NCMS program, it can attend quarterly meetings, where all of the research projects are reviewed and discussed. And if a company can't even make quarterly meetings, it can wait a year or two until a complete report on the research that was done is published and mailed to members. In the interim, workshops and seminars are held on the research.

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NCMS officials and members admit the organization is promoting a near-foreign approach to R&D. "We don't know if it's going to be a success. The jury is still out," says Jamie Kenworthy, a charismatic state official currently on leave from a management position with the Michigan Strategic Fund (a state agency that handles small business finance) after serving on the Kenneth Weiner jury ("I've got to write a book," he says.)

But he believes corporate acceptance is changing. "Companies are joining NCMS out of (financial) necessity but end up becoming true believers when they discover they're dealing with other people who are moving innovation out onto the factory floor."

So far, 125 "true believers" have signed on with NCMS since its inception. They include such industrial giants as General Motors, Ford, AT&T, Digital Equipment Corp., Pratt and Whitney and Rockwell International. NCMS also counts dozens of small and medium-size firms among its ranks.

Membership is strictly limited to U.S. and Canadian companies--companies that do at least 50 percent of their R&D and manufacuturing in the U.S. or Canada and are at least 50 percent owned by U.S. or Canadian citizens. Dues are structured to enable small manufacturers to join, says Sheridan. While GM pays $ 250,000 annually to belong, small firms only shell out $ 2,500 to reap the same membership privileges.

"The large companies have decided it's critical to have their suppliers meet with them in this organization, so we've set the dues to bring the small companies to us," Sheridan says.

This kind of collaboration first led Lawrence Rhoades, president of Extrude Hone Corp. in Irwin, Pa., to investigate and then join NCMS. Extrude Hone sells machine tools and machine tool manufacturing processes. Rhoades says the company has always devoted time and money to research and development. Now, with NCMS, time and money are pooled with other companies to work on mutually beneficial technologies. The result is access to more research and funding, Rhoades says. Take Extrude Hone's abrasive suspension jet machine research. A derivative of abrasive water jet machine technology, suspension jet technology suspends the abrasives in fluid.

"This is a project we would have never gotten involved with without the NCMS," Rhoades says. "This was a process we had looked into several years back. We thought it was interesting, but then just continued down our main line of business."

When Extrude Hone joined NCMS, other member companies and NCMS officials identified suspension jet technology as important and pushed Extrude to undertake more research to develop it.

"NCMS encouraged us to pursue this process and got us funding to do so," Rhoades says. "They idenified this as an opportunity for us. We would not have undertaken this project if it hadn't been for NCMS."

Extrude has been working on the technology for about a year. The company will begin the second phase of the project--working with NCMS user companies to transfer the technology to the factory floor--this year. Rhoades predicts Extrude Hone will be able to offer a finished product for sale by year's end.

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It will first be offered to NCMS members, and then sold to other American manufacturers.

J. Richard Macan, director of member services, likes to tell another story. At an NCMS meeting last year, a company representative with a very large firm sat down to discuss technology "near and dear to his heart" with representatives from several other companies.

"He started talking with a rep from another firm and found out he was five years behind with this technology," Macan says. "So not only did it save him five years of duplicate research, but he got together with another company and the two of them pooled their money for some joint precompetitive research that led them both further than they could have gone alone."

Today, NCMS is coordinating research and funding for about 70 high-tech projects in five strategic areas: production equipment and systems, manufacturing processes and materials, computer integrated operations, management practices, and environmentally-conscious manufacturing. One multi-million dollar project, for example, will develop the next generation of machine vision inspection systems, and is led by representatives from GM, Ford, Pratt and Whitney, Giddings & Lewis, SAMI, and several software firms and machine tool companies. Funding for this project, as with all NCMS projects, is split on a 60-40 basis. Companies that opt to participate in a particular project split up 60 percent of the cost; the remaining 40 percent comes primarily from government dollars funneled through NCMS.

Since 1984, when the National Cooperative Research Act made it possible for firms to legally engage in precompetitive research, government support of the consortia idea has grown. A bill currently pending in Congress would grant a 50 percent tax break to companies engaged in R&D through a consortium. NCMS expects the legislation to pass this spring. William Andahazy, a staff member with the House Arms Services Committee points out that the Department of Defense has always maintained an industrial funding line "to solve specific military problems like a bad helicoptor rotor or a problem gear."

Officials at NCMS say that federal money is dominating less of NCMS' funding as more companies join the organization. What remains critical to the organization, is the government's willingness to make research conducted in federal laboratories available to NCMS members. While the government remains mum on how it's applying a specific technology (usually in weapon systems), it will share the raw research with NCMS.

Macan points out it's tough for an individual company to obtain information from a federal laboratory. It takes at least six months of legal paperwork for a firm to obtain a key. But NCMS requests are cleared in 72 hours, Macan says, and a technology exchange begins almost immediately afterwards.

But the ultimate driving force behind NCMS is the cross fertilization of ideas from one company to another. If there's an unspoken belief at NCMS, it's that the competition is the guy sitting across the ocean, not the table.

The downturn is also helping NCMS bring about a change in company thinking, says Ted Olson, vice president of Technology Transfer at NCMS. "Increasingly, even the large companies are beginning to realize they can't do it all themselves. The only way they can do all of what they want to do is by

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leveraging costs with other companies through the consortium."

"Michigan is luckier than hell to have the NCMS right there," Pryor agrees. "The whole (manufacturing) equation has changed and the NCMS is the key group responsible for those changes."

GRAPHIC: Photo

SUBJECT: Consortia; Industrial development; R&D; Government spending; North Central

GEOGRAPHIC: North Central Region; Southfield; MI; US

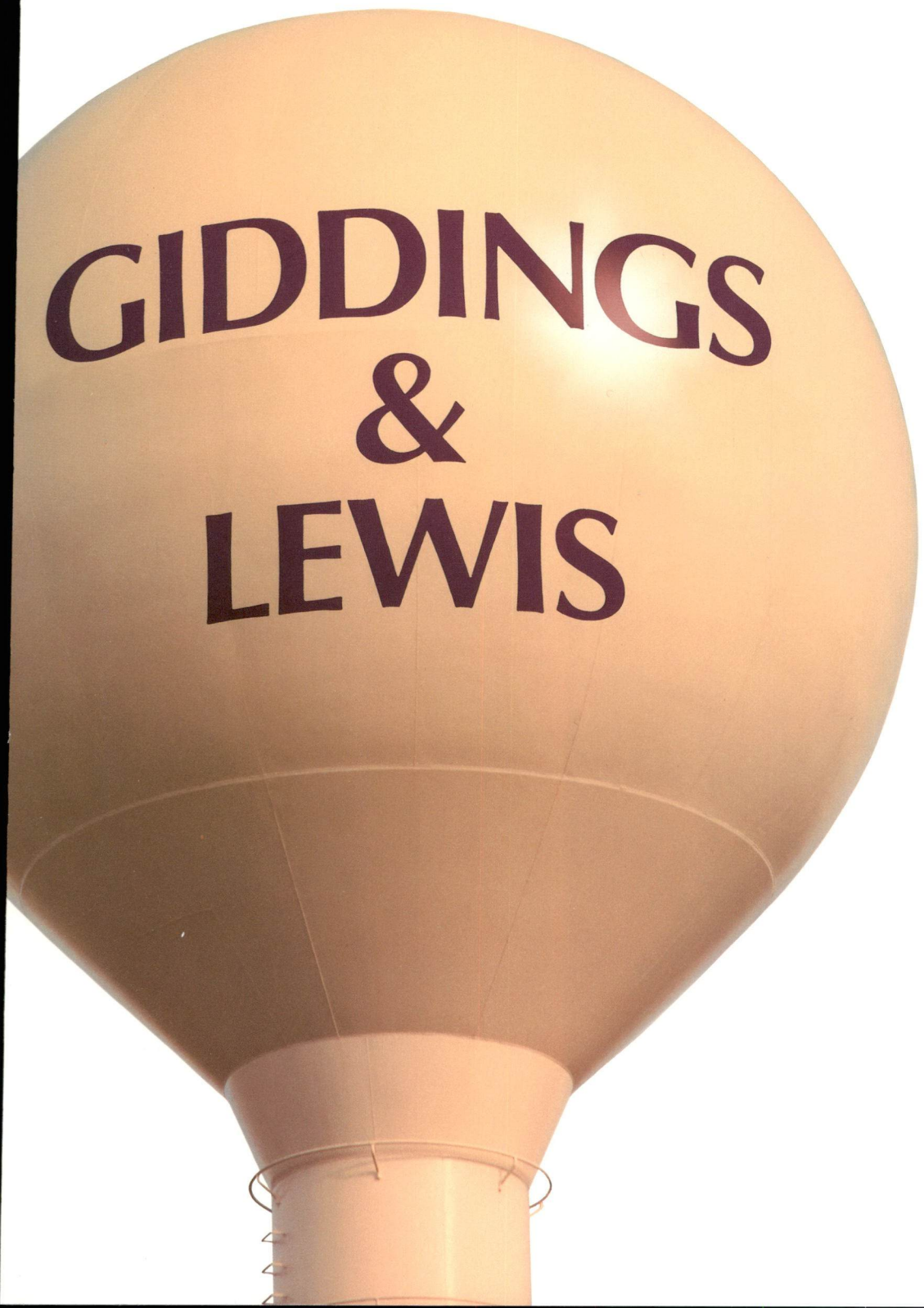
COMPANY: Sensor Adaptive Machines Inc; SIC: 3569

LOAD-DATE-MDC: April 7, 1992

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ENGINES

Manufacturing Systems
Experience



Note: Protective guards have been removed from some of the machines shown for improved display purposes only.

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ONE TEAM, ONE NAME

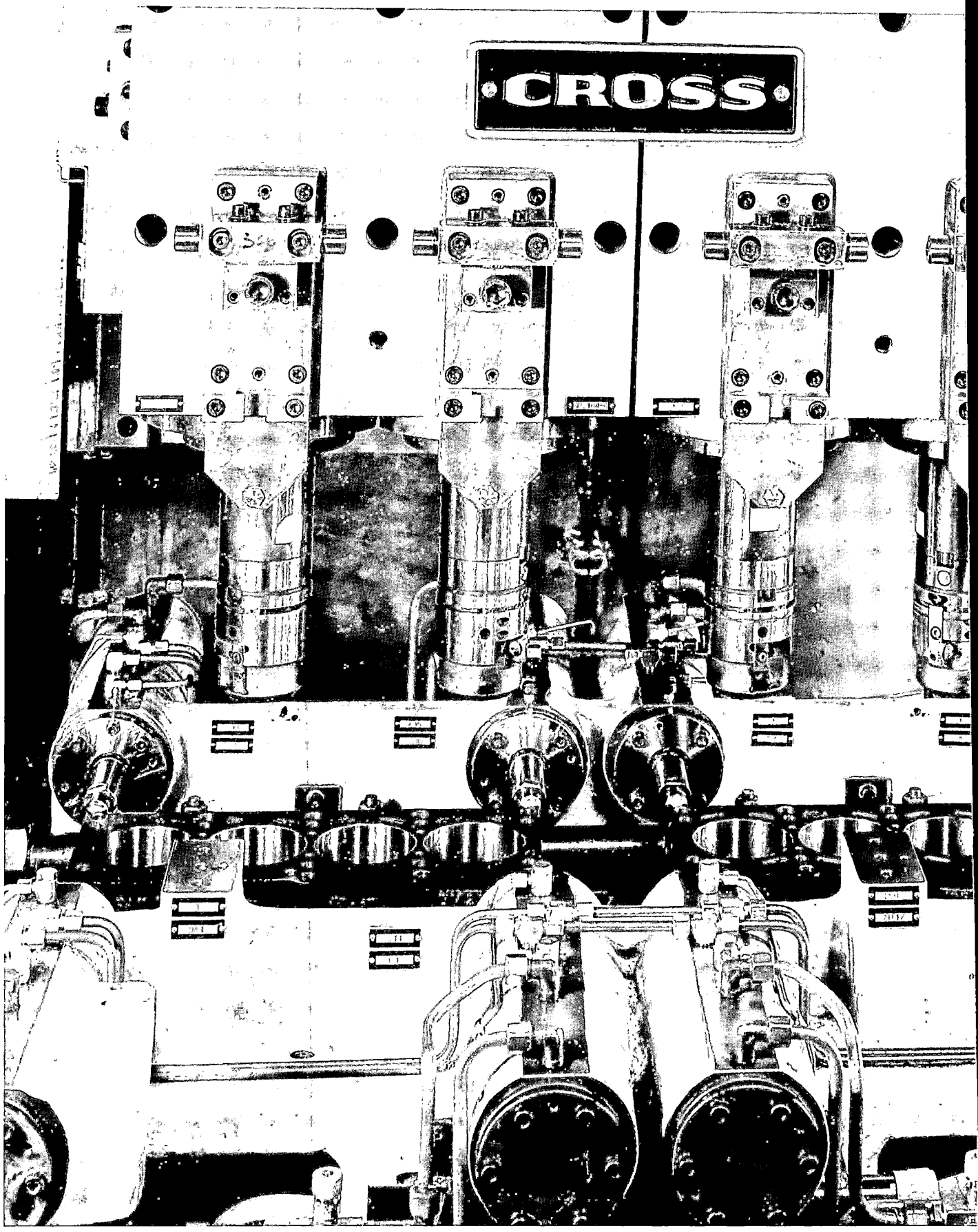


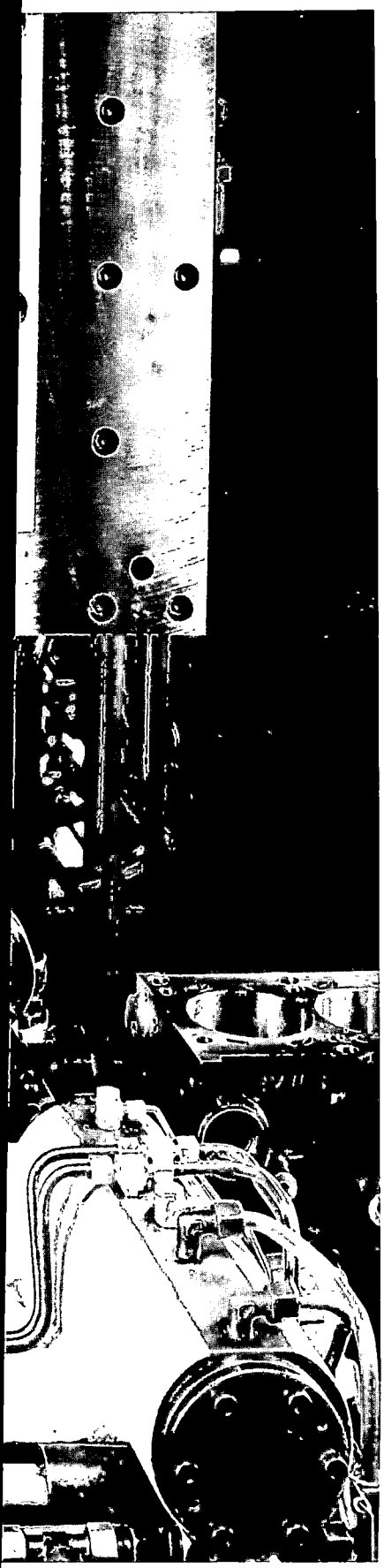
There is a new logo on the water tower at our Fraser, Michigan plant. Cross & Trecker has joined the broad-based Giddings & Lewis industrial automation family. We're one team, with one name.

This event further strengthens the innovative and customer oriented capabilities that have always characterized the Cross approach to solving your manufacturing challenges and helping you achieve your goals.

The engine manufacturing experience illustrated in the following pages demonstrates that today's Giddings & Lewis offers you a resource second to none.

BLOCK EXPERIENCE
1256 MACHINES





Making Engines Since 1900

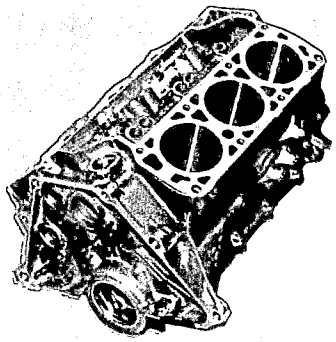
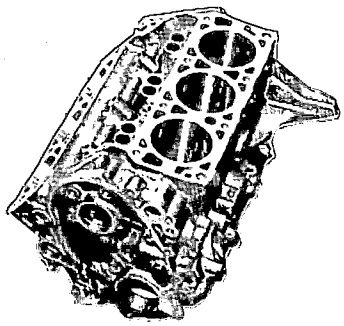
We gained our first engine manufacturing experience back around the turn of the century. We manufactured marine engines and transmissions in those early years and did not get serious about building special machines until the 1930s. From that point on however, we have compiled a list of experience and contributions to engine manufacturing technology worthy of your consideration.

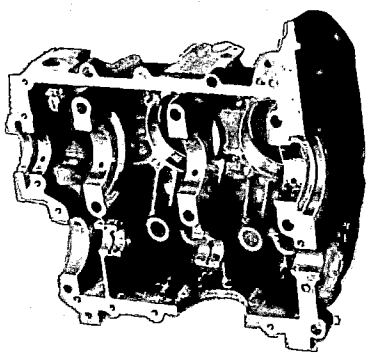
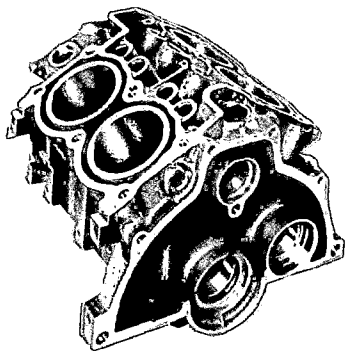
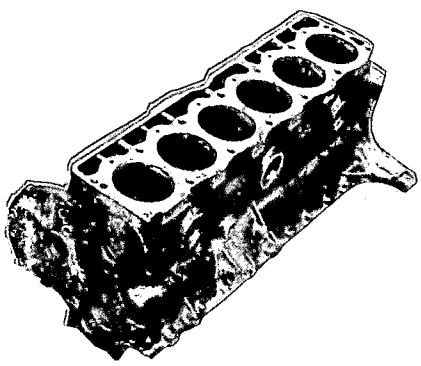
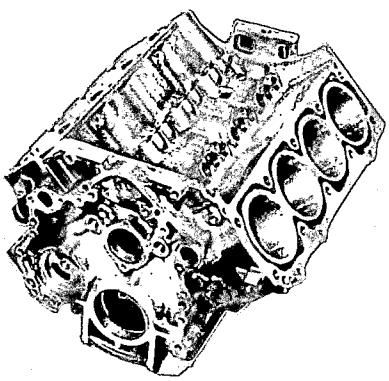
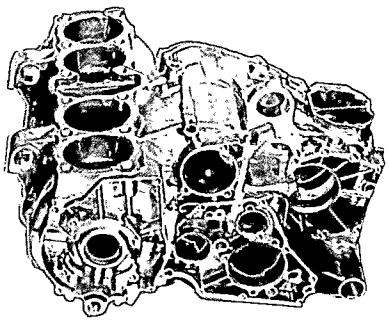
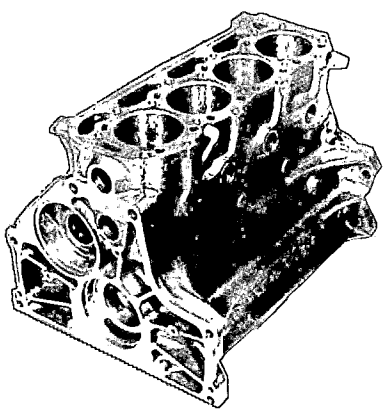
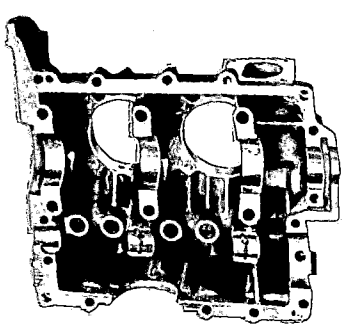
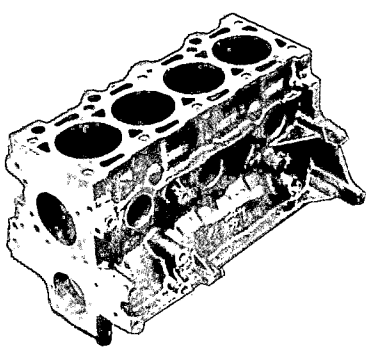
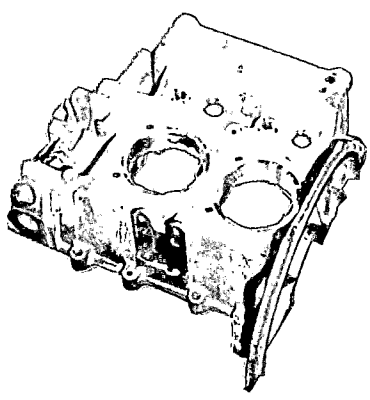
Idea

The photo at the left shows a semi-finish and finish cylinder boring station that produces optimum cylinder bore size and geometric accuracy. This and other such stations in Cross systems feature: Two-position eccentric boring spindles: one for semi and one for finish boring. Positioning of eccentric by CNC servo motor drive eliminates use of adjustable or fixed stops. Cylinder walls supported by jacks to minimize deflection. Coolant pumped through water jacket to minimize thermal distortion.

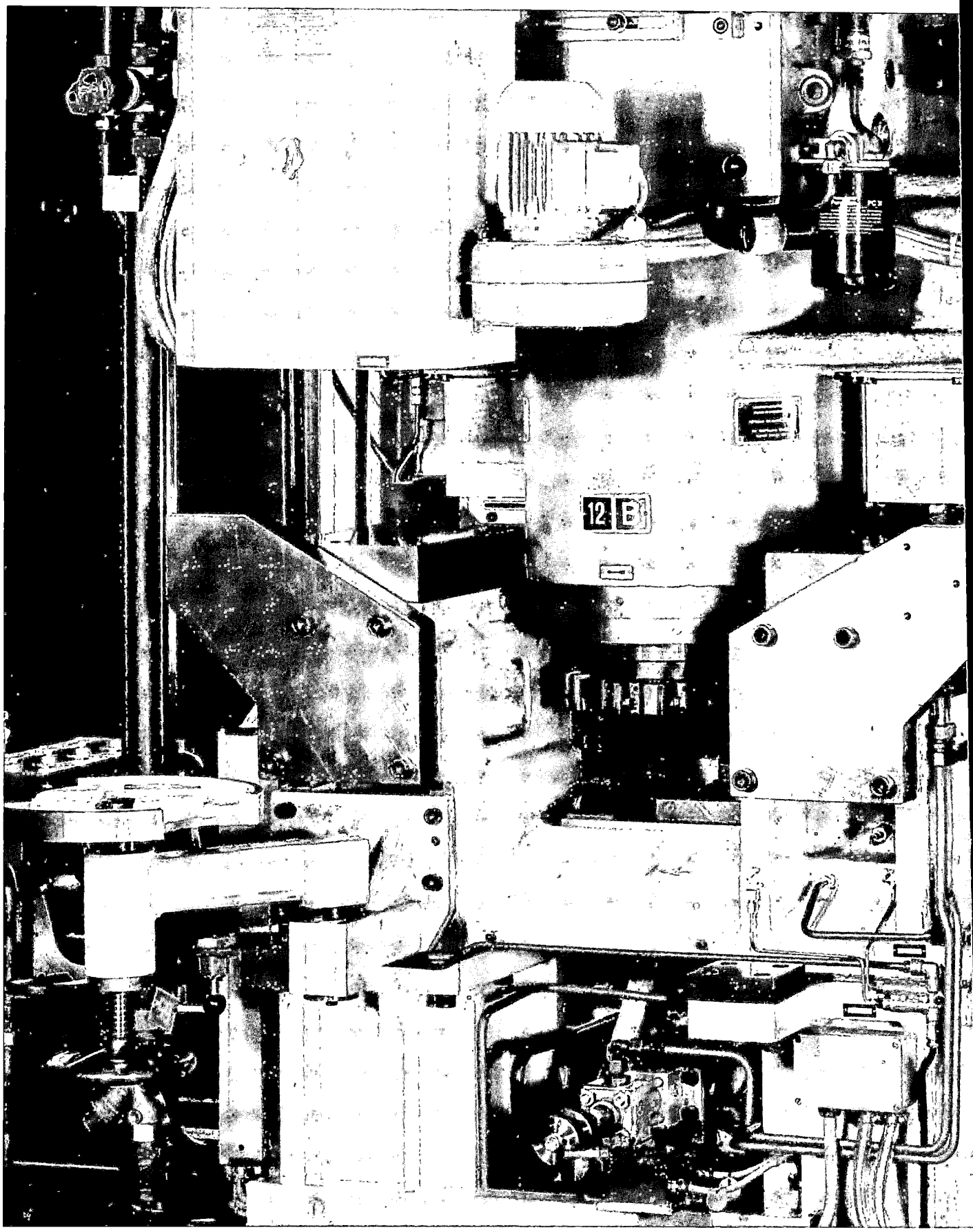
BLOCK EXPERIENCE

1944 GMC Detroit Diesel Allison (1 machine)
1946 Chrysler Dodge Division (4 machines)
1948 GMC Oldsmobile Division (2 machines)
1948 GMC Chevrolet Flint (2 machines)
1948 Kaiser-Frazer Corporation (3 machines)
1949 Reo Lansing (4 machines)
1950 Ford Cleveland Engine Plant (3 machines)
1951 Chrysler Dodge Division (3 machines)
1952 Ford Dearborn Engine Plant (3 machines)
1952 Ford Cleveland Engine Plant (2 machines)
1952 Ford Tractor Highland Park Division (3 machines)
1954 GMC McKinnon Canada (1 machine)
1954 GMC Chevrolet Tonawanda (1 machine)
1954 Ford Cleveland Engine Plant (2 machines)
1955 GMC Chevrolet V8 Flint (4 machines)
1957 Ford Lima Engine Plant (29 machines)
1957 Ford Windsor Canada (1 machine)
1957 Ford Cleveland Engine Plant (19 machines)
1958 GMC Chevrolet Tonawanda (1 machine)
1958 GMC Adam Opel Germany (2 machines)
1959 GMC Truck & Coach Division (4 machines)
1960 GMC Adam Opel Germany (4 machines)
1960 GMC Chevrolet Tonawanda (1 machine)
1961 Ford Dagenham England (3 machines)
1961 Ford Cologne Germany (18 machines)
1962 GMC Holdens Australia (6 machines)
1962 Ford Cologne Germany (1 machine)
1962 Ford Motor Australia (1 machine)
1963 Citroen France (2 machines)
1963 GMC Oldsmobile Division (2 machines)
1963 Premier Auto India (1 machine)
1963 Tata Engine India (2 machines)
1963 Ford Cologne Germany (20 machines)
1963 Volkswagen Germany (1 machine)
1963 Ford Dagenham England (2 machines)
1964 GMC Chevrolet Tonawanda (2 machines)
1964 Ford Cleveland Engine Plant (2 machines)
1964 Ford Dagenham England (11 machines)
1964 GMC Holden Australia (2 machines)
1965 GMC Adam Opel Germany (9 machines)
1965 Ford Windsor Canada (2 machines)
1966 Hindustan Motors India (55 machines)
1966 Toyota Motor Co. Japan (1 machine)
1966 GMC Adam Opel Germany (10 machines)
1966 Volkswagen Germany (1 machine)

BLOCK EXPERIENCE





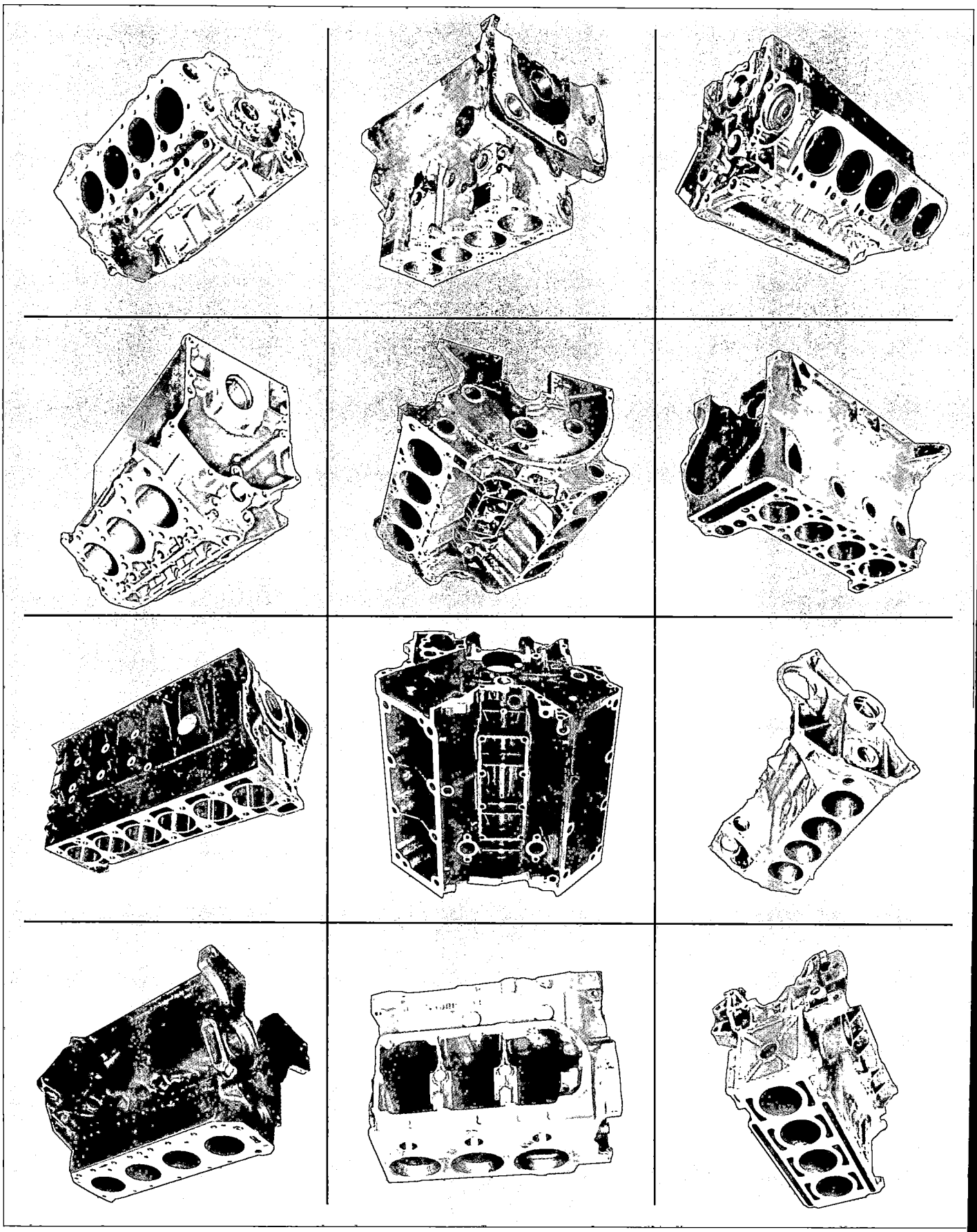
Idea

This station performs the finish milling operation on the block cylinder head face. To optimize accuracy of the dimension between the crank bores and the head face each block is gaged in a succeeding station. Gaging data are fed back to a servo motor that repositions the milling spindle slide as required. This procedure compensates for variations in ambient and machine temperatures that affect the dimension between the crank bores and head face.

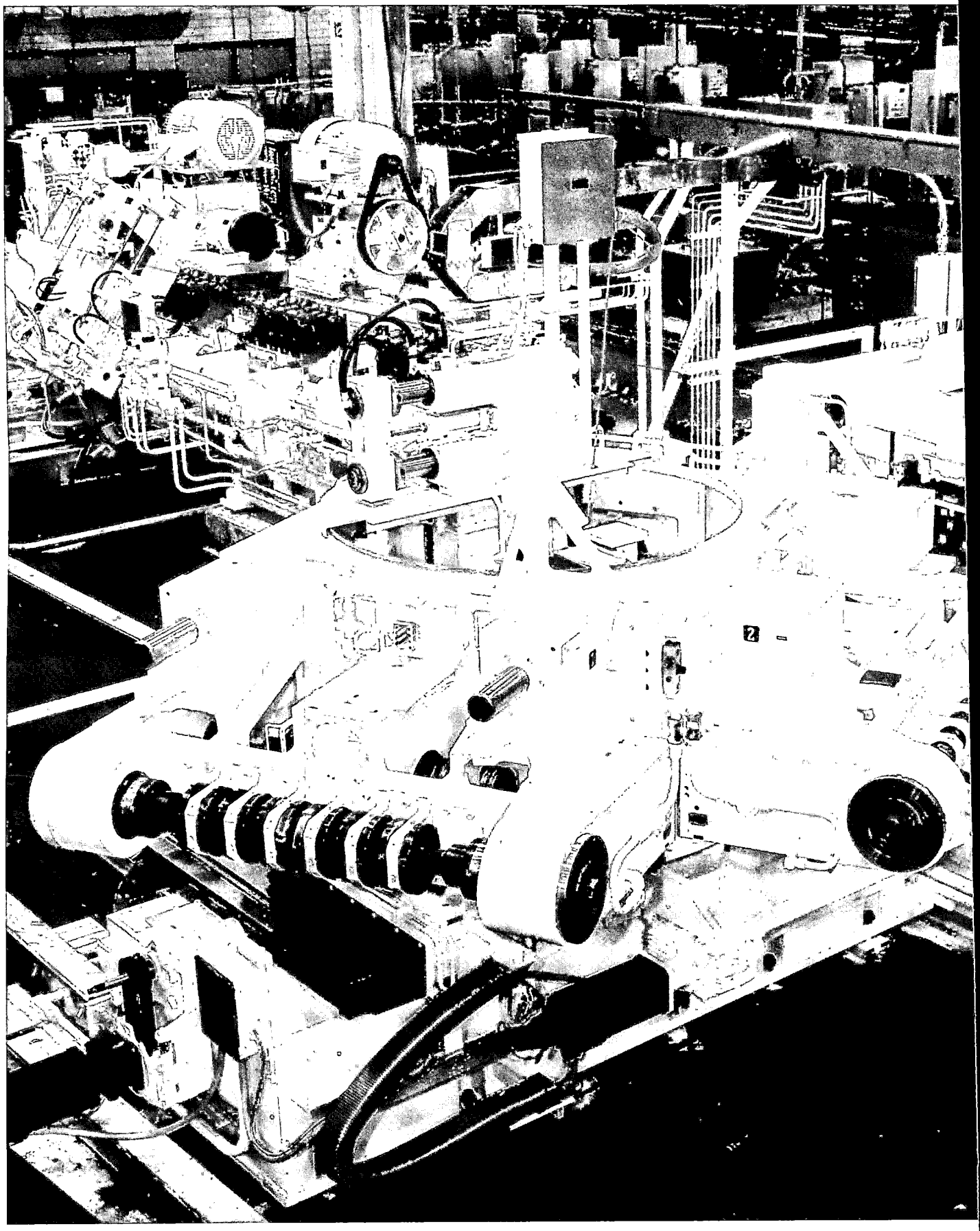
BLOCK EXPERIENCE

Block Experience (cont.)

1966 GMC Chevrolet Saginaw (2 machines)
1967 GMC Canada St. Catharines (2 machines)
1967 Chrysler Trenton Engine Division (17 machines)
1967 GMC Vauxhall England (8 machines)
1967 Ford Cologne Germany (2 machines)
1967 Volvo Sweden (2 machines)
1968 GMC Holden Australia (2 machines)
1968 GMC Adam Opel Germany (2 machines)
1968 Ford Lima Engine Plant (3 machines)
1968 Ford Cleveland Engine Plant (2 machines)
1968 Volkswagen Germany (2 machines)
1969 Mitsubishi Japan (2 machines)
1969 Ford Cologne Germany (15 machines)
1969 Fiat Italy (4 machines)
1969 Ford Dagenham England (8 machines)
1970 Alfa Romeo Italy (17 machines)
1970 White Motor Cleveland (16 machines)
1970 Ford Thames England (1 machine)
1970 Volkswagen Germany (21 machines)
1970 Ford Dearborn Engine Plant (2 machines)
1970 GMC Chevrolet V8 Flint (3 machines)
1970 Volkswagen Germany (16 machines)
1970 Ford Dearborn Engine Plant (2 machines)
1970 GMC Chevrolet V8 Plant (5 machines)
1971 Audi NSU Germany (11 machines)
1971 Daimler Benz Germany (5 machines)
1971 GMC Chevrolet V8 Flint (4 machines)
1971 Nissan Motor Japan (1 machine)
1971 GMC Detroit Diesel Allison (3 machines)
1971 GMC Chevrolet Tonawanda (1 machine)
1971 Toyota Motor Co. Japan (2 machines)
1972 Volkswagen Germany (21 machines)
1972 Ford Dagenham England (1 machine)
1972 GM do Brasil (1 machine)
1972 Ford Lima Engine Plant (17 machines)
1972 GMC Detroit Diesel Allison (4 machines)
1972 Ford Flat Rock (1 machine)
1972 GMC Chevrolet V8 Flint (1 machine)
1973 Ford Brazil Engine Plant (13 machines)
1973 GMC Korea (6 machines)
1973 Iran National Industrial Manufacturing Company (23 machines)
1973 Peugeot France (1 machine)
1973 GMC Detroit Diesel Allison (1 machine)
1974 International Harvester India (1 machine)



BLOCK EXPERIENCE





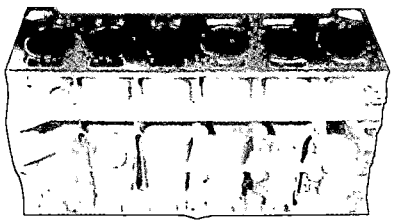
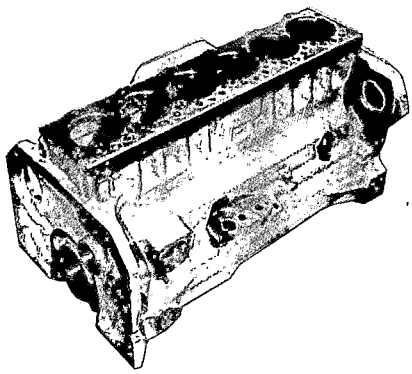
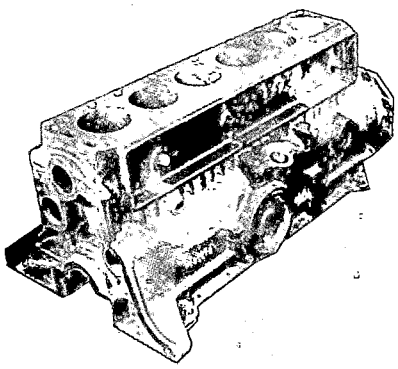
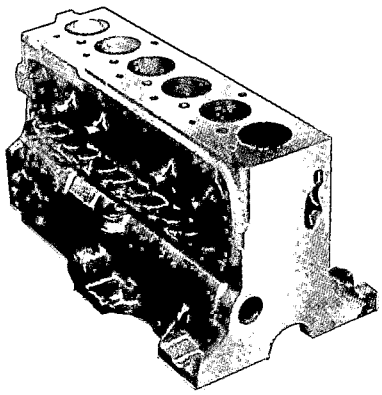
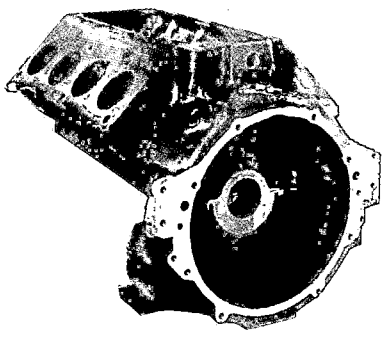
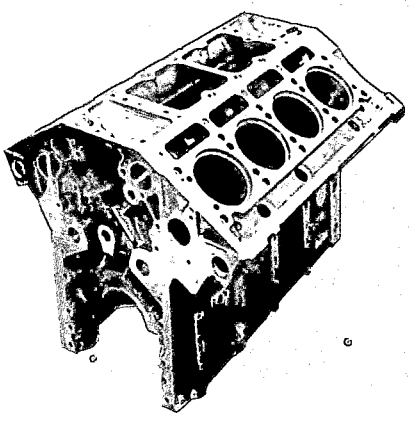
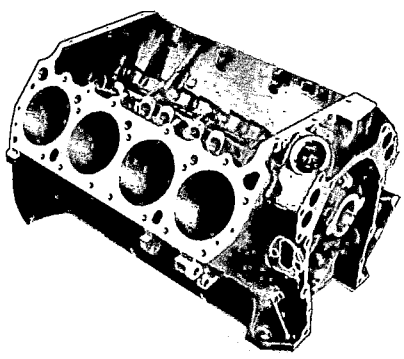
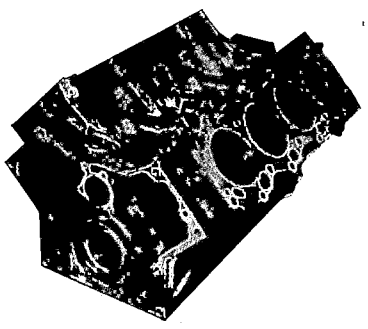
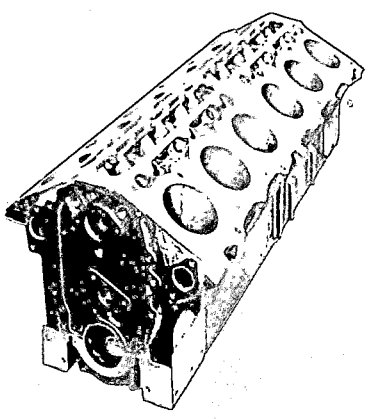
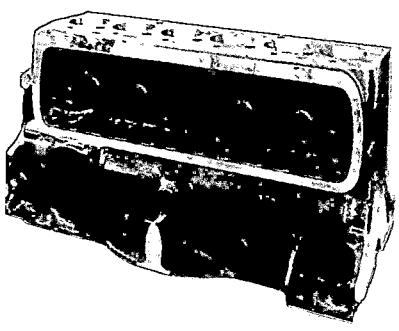
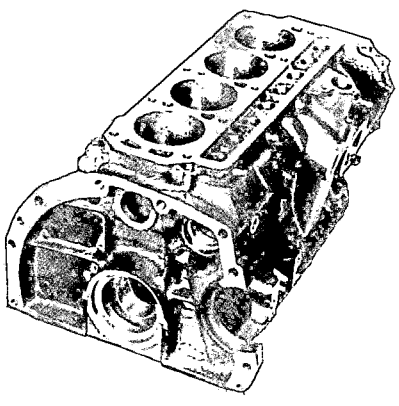
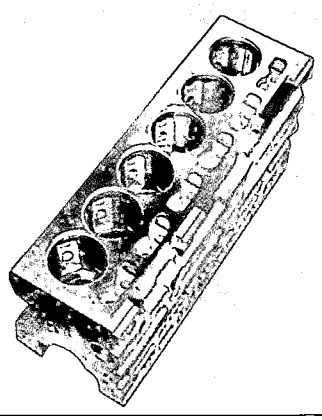
Idea

This photo shows a milling station that is part of a flexible low-production system for large 6-cylinder blocks. The long time-cycle permits multiple pass machining at single stations. The 4-position indexing unit shown here performs three different operations and has one vacant position for future additions or changes. The first position head mills the bulkheads. The second head rough bores the crank bearing half-rounds and plunge mills the oil grooves. The third head mills the bearing lock notches.

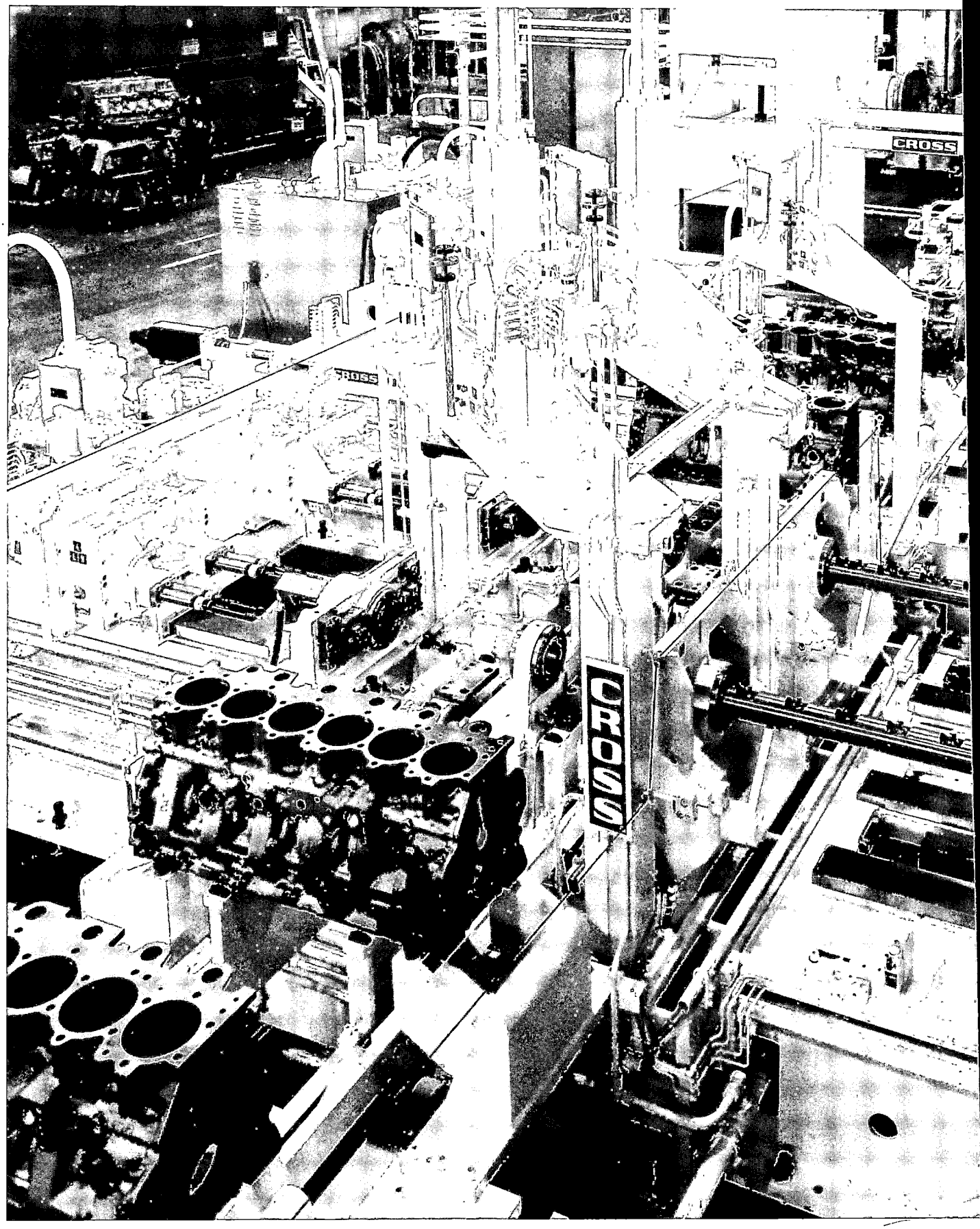
BLOCK EXPERIENCE

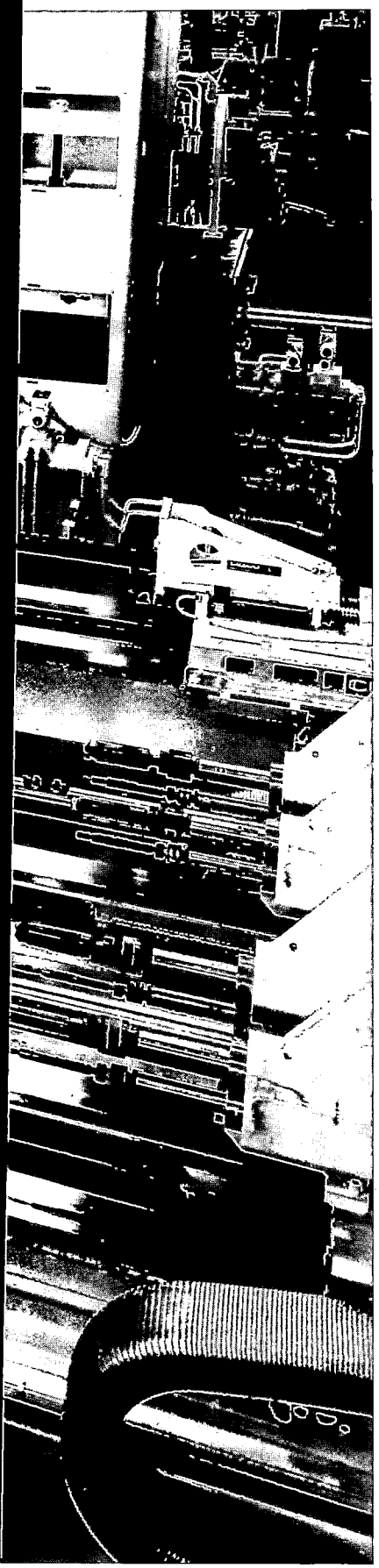
Block Experience (cont.)

1974 Caterpillar Mossville (10 machines)
1974 Caterpillar Davenport (1 machine)
1974 Toyota Motor Co. Japan (3 machines)
1974 GMC Adam Opel Germany (3 machines)
1974 Ford Dagenham England (2 machines)
1974 Rover-British Leyland Ltd. England (1 machine)
1974 Triumph-British Leyland Ltd. England (2 machines)
1974 Caterpillar Mapleton (1 machine)
1974 Caterpillar Peoria (3 machines)
1975 GMC Chevrolet Flint Engine (1 machine)
1975 American Motors Wisconsin (4 machines)
1975 GMC Pontiac Division (2 machines)
1975 John Deere Waterloo (10 machines)
1975 Hyundai Motor Car Co. Korea (7 machines)
1975 Ford Motor Co. Spain (2 machines)
1976 GMC Buick Division (1 machine)
1976 Caterpillar Mapleton (1 machine)
1976 Massey Ferguson-Perkins Diesel Ohio (13 machines)
1976 Yamaha Motor Co. Japan (3 machines)
1976 Hyundai Motor Car Co. Korea (8 machines)
1976 Ford Dagenham England (2 machines)
1977 American Motors Indiana (3 machines)
1977 GMC Pontiac Division (2 machines)
1977 GMC Oldsmobile Division (7 machines)
1977 Yamaha Motor Co. Japan (6 machines)
1977 ITM Iran (24 machines)
1977 Iran National Industrial Manufacturing Company (4 machines)
1977 British Leyland Ltd. England (2 machines)
1977 RA Lister Ltd. England (3 machines)
1978 GMC Chevrolet Tonawanda (41 machines)
1978 Ford Essex Canada (11 machines)
1978 Ursus Poland (39 machines)
1978 Triumph-British Leyland Ltd. England (1 machine)
1978 Yamaha Motor Co. Japan (2 machines)
1979 Rover-Triumph-British Leyland Ltd. England (11 machines)
1979 Mack Trucks Hagerston (1 machine)
1979 GMC Detroit Diesel Allison Romulus (16 machines)
1979 Ford Dearborn Engine Plant (24 machines)
1979 GMC Detroit Diesel Allison Redford (1 machine)
1979 British Leyland Ltd. England (4 machines)
1979 Yamaha Motor Co. Japan (15 machines)

BLOCK EXPERIENCE





Idea

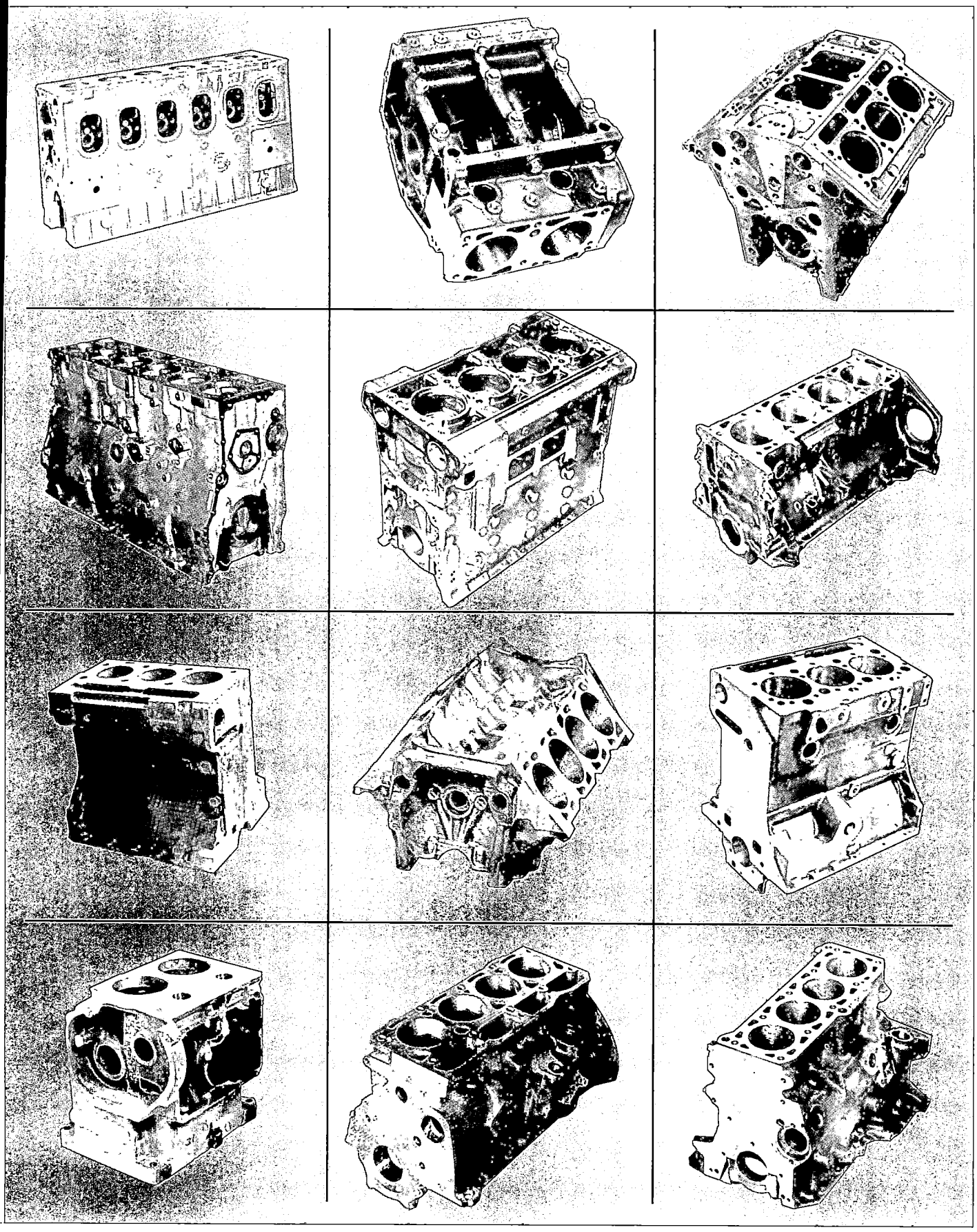
This photo shows a station that performs finish machining of the crankshaft bores and bearing thrust face, and boring of the dowel holes. A unique boring bar and head design permits the thrust face machining to be accomplished in this station thus saving the expense of a separate station normally required for this operation. Crank bores are automatically gaged in succeeding station. A servo motor spindle drive and encoder eliminate mechanical latch spindle orienting mechanism.

Other technological advancements include a new high strength boring bar design that eliminates the need for bar support bushings. The bar employs a new cutting tool cartridge design that provides a stronger bar cross-section due to smaller mounting pocket requirements. Additional bar strength is added due to elimination of traditional key way (and key) to orient support bushings.

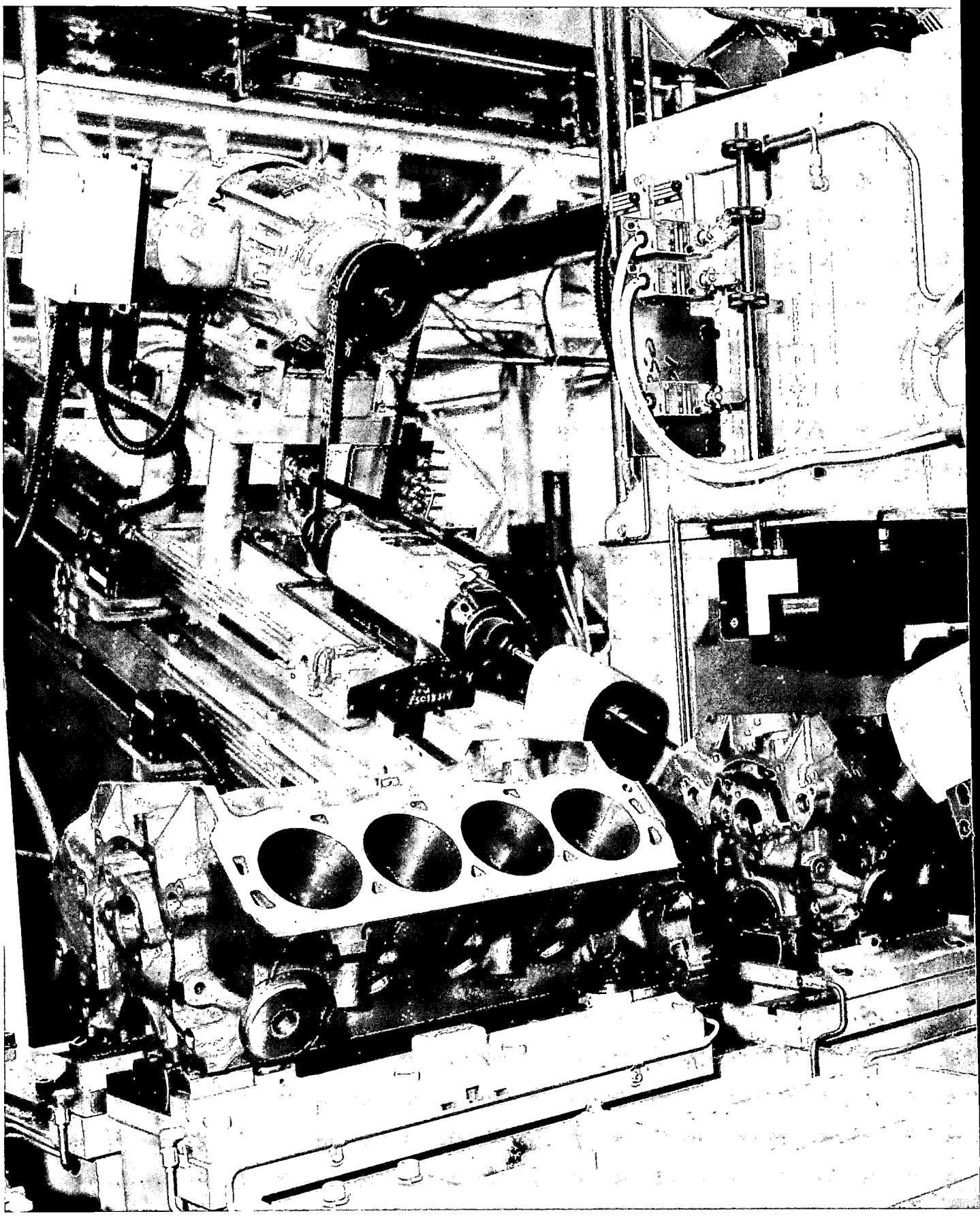
BLOCK EXPERIENCE

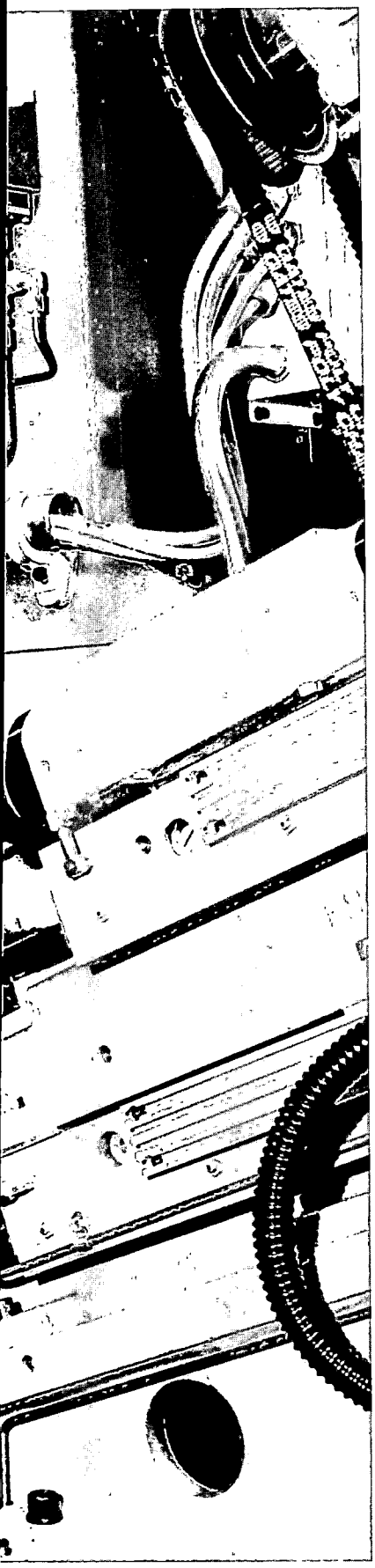
Block Experience (cont.)

1980 Caterpillar Mossville (2 machines)
1980 Mack Trucks Hagerston (1 machine)
1980 Ford Lima Engine Plant (19 machines)
1980 Ford Essex Canada (10 machines)
1980 Ford Dearborn Engine Plant (10 machines)
1980 J.I. Case Tractor Plant Wisconsin (1 machine)
1980 John Deere Waterloo (1 machine)
1980 Yamaha Motor Co. Japan (3 machines)
1980 Saehan Motor Co. Korea (2 machines)
1980 Ford Tractor England (1 machine)
1980 Ford Dagenham England (3 machines)
1980 GMC Holden Australia (5 machines)
1980 GM do Brasil (5 machines)
1980 GMC Adam Opel Germany (8 machines)
1981 GMC Saltillo Mexico (9 machines)
1981 GM of Canada St. Catharines (18 machines)
1981 GM Austria Plant Austria (2 machines)
1981 Chevrolet Tonawanda (16 machines)
1981 GMC Central Foundry Bedford (1 machine)
1981 Cummins Engine Lakewood (6 machines)
1981 Toyota Motor Co. Japan (1 machine)
1981 Yamaha Motor Co. Japan (26 machines)
1982 Ford Dagenham England (2 machines)
1982 Ford Chihuahua Mexico (17 machines)
1982 Nissan Motor Co. Japan (3 machines)
1982 Chevrolet Tonawanda (12 machines)
1982 GMC Detroit Diesel Allison (1 machine)
1982 Cummins Engine Lakewood (9 machines)
1982 Consolidated Diesel Whitakers (12 machines)
1982 Ford Lima Engine Plant (12 machines)
1982 John Deere Waterloo (1 machine)
1982 Toyota Motor Co. Japan (1 machine)
1982 Yamaha Motor Co. Japan (3 machines)
1982 Avtozavod Kutaissi U.S.S.R. (2 machines)
1983 Chevrolet Tonawanda (4 machines)
1983 Ford Lima Engine Plant (14 machines)
1983 Caterpillar Tractor Lafayette (3 machines)
1983 Daimler-Benz Germany (3 machines)
1983 Turbomotornji Sverdlovsk U.S.S.R. (1 machine)
1984 Daimler-Benz Germany (4 machines)
1984 Ford Cologne Germany (15 machines)
1984 Isuzu Motor Co. Japan (4 machines)
1984 Nissan Motor Co. Japan (2 machines)
1985 Chrysler Trenton Engine (8 machines)
1985 Daewoo Motors Korea (9 machines)



BLOCK EXPERIENCE





Idea

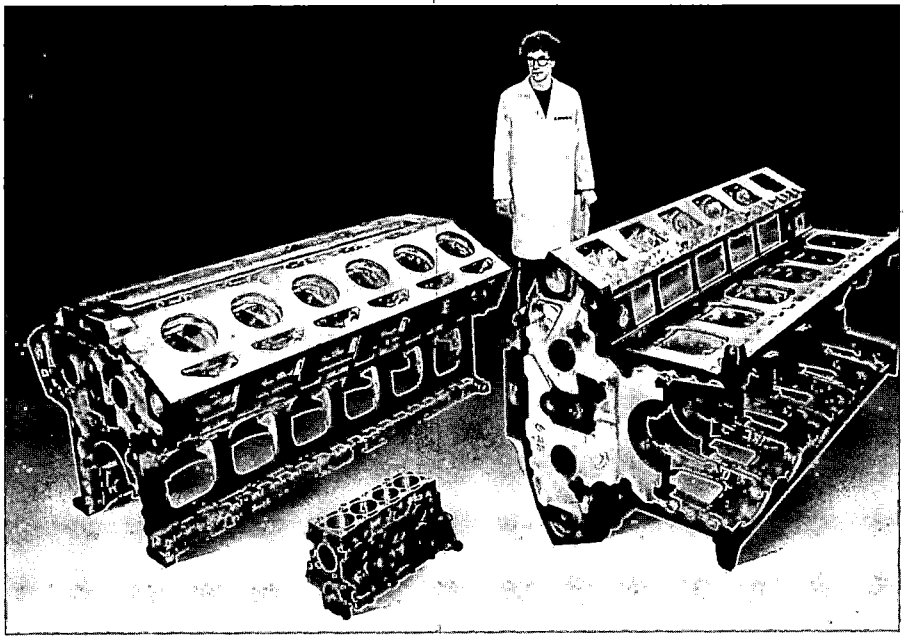
This photo shows one of the gundrilling stations in a system that produces V-8 cylinder blocks. Gundrilling is employed to machine the oil gallery and drainback holes. This approach eliminates stations for multiple drilling passes that are necessary when conventional drills are used. Tool breakage and related downtime are also minimized by using gundrills.

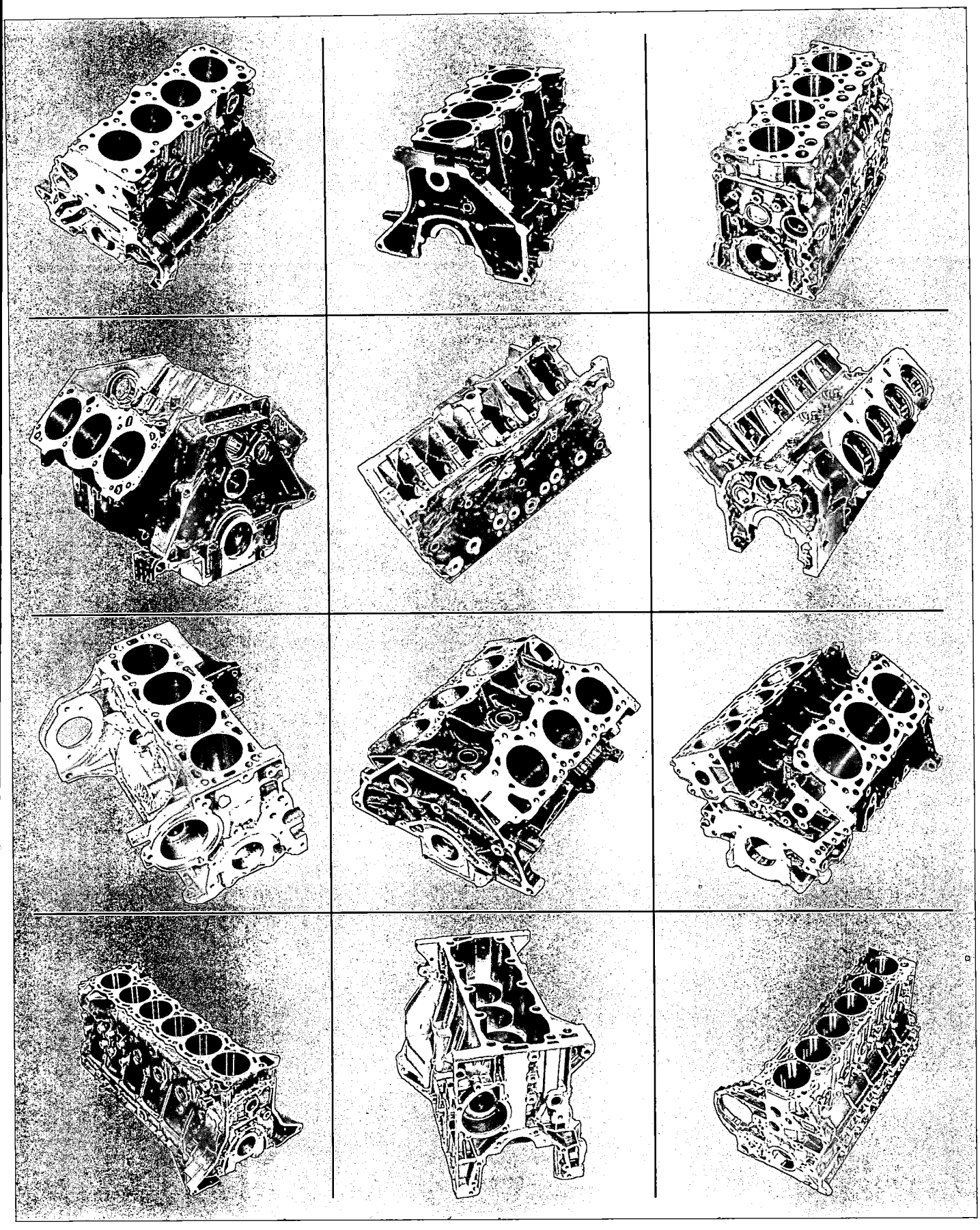
These stations feature Cross "Piggy-Back" precision low contour slides that permit extremely accurate alignment between the bushings and gundrills. Slides are servo driven. The main slide positions the bushings relative to the cylinder block. The Piggy-Back slide feeds the gundrills.

BLOCK EXPERIENCE 1256 MACHINES

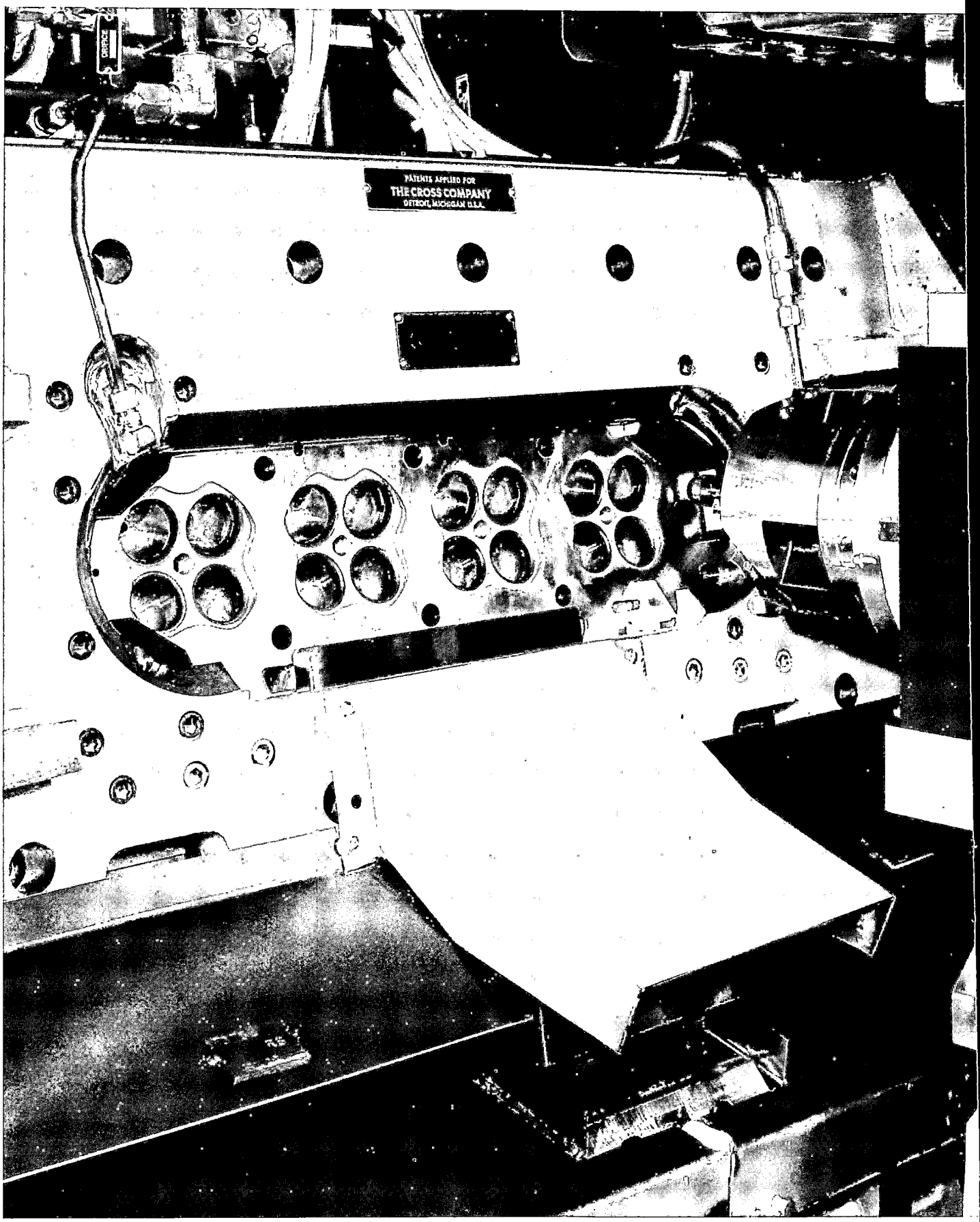
Block Experience (cont.)

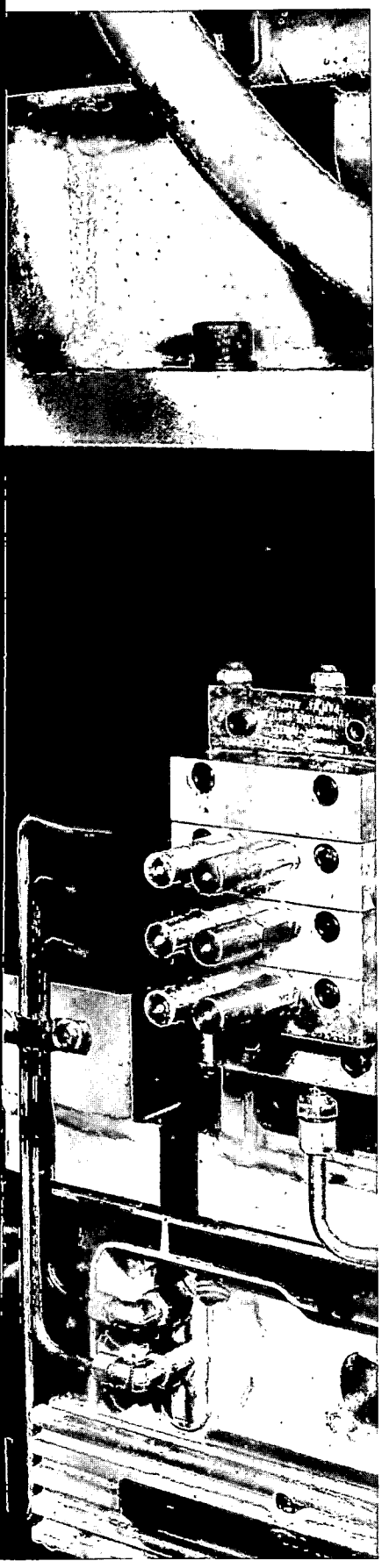
1985 Hyundai Motors Korea (1 machine)
1985 Yamaha Motors Japan (9 machines)
1986 BMW Steyr Austria (10 machines)
1986 Luoyang Tractor Plant PRC (3 machines)
1987 Hyundai Motors Korea (4 machines)
1987 Ford Motor Australia (10 machines)
1988 Beijing Jeep Corp. PRC (7 machines)
1988 Ford Cologne Germany (24 machines)
1988 BMW Steyr Austria (1 machine)
1988 Hyundai Motors Korea (3 machines)
1989 BMW Steyr Austria (1 machine)
1989 Second Auto Works PRC (2 machines)
1989 Saab Sweden (3 machines)
1989 GM Mexico (1 machine)
1989 Yeu Tyan Taiwan (17 machines)
1989 Hyundai Motors Korea (2 machines)
1989 Isuzu Japan (1 machine)
1990 Hyundai Motors Korea (6 machines)
1990 Mitsubishi Japan (1 machine)
1990 Toyota Motor Co. Japan (1 machine)
1990 BMW Munich Germany (1 machine)
1990 Volkswagen (2 machines)
1990 Audi Ingolstadt (7 machines)
1990 BMW Steyr (5 machines)
1990 CPC Flint (4 machines)
1990 Vaz U.S.S.R. (5 machines)
1991 GM Saltillo (1 machine)
1991 Caterpillar Mossville (7 machines)
1991 Hyundai Motors Korea (5 machines)
1991 Nissan Motor Co. Japan (8 machines)





CYLINDER HEAD EXPERIENCE
308 MACHINES





Making Heads Since 1949

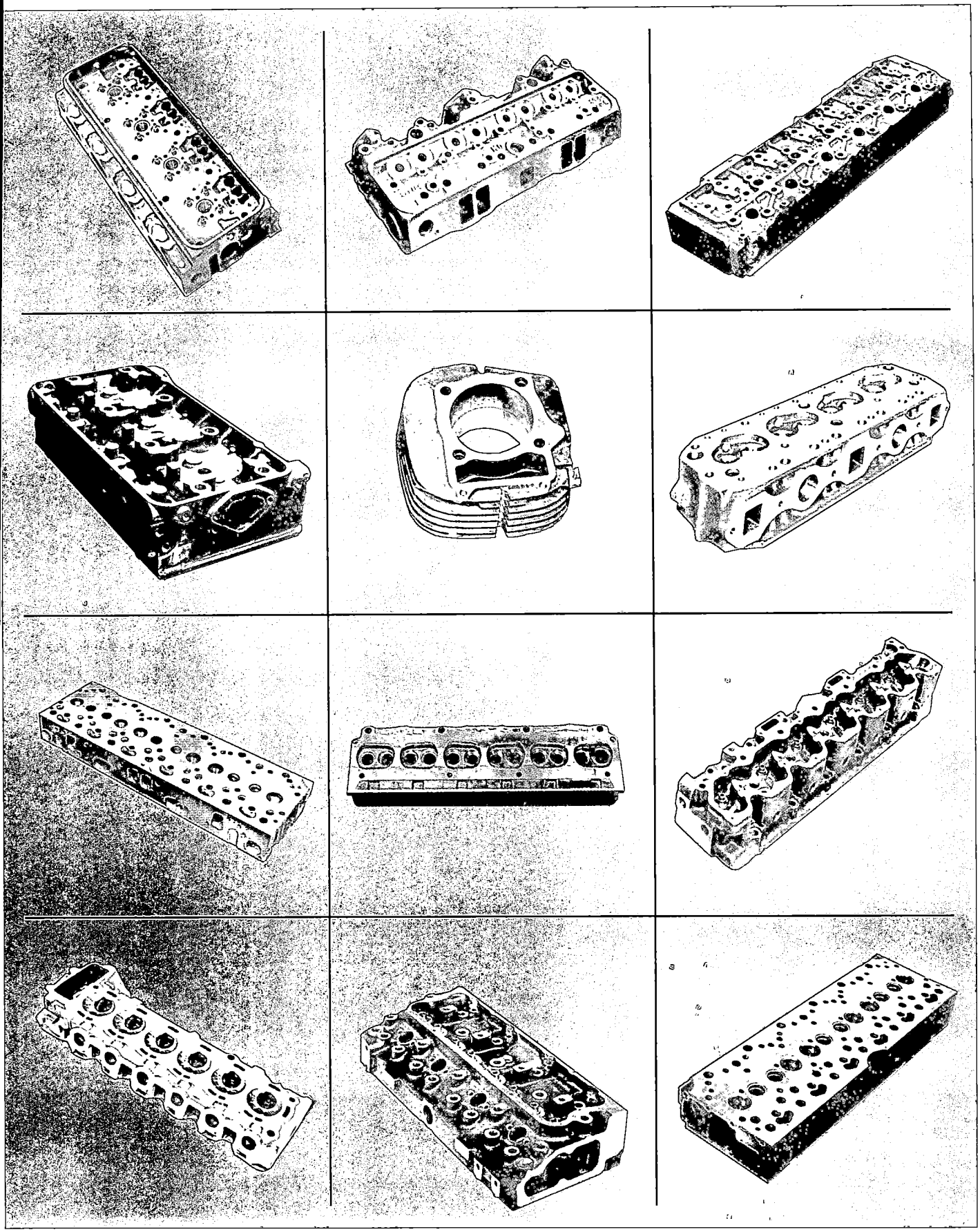
Cross has built over 280 cylinder head machines since 1949. These machines were built for over 30 different customers and are running in over 15 countries throughout the world. This experience covers all popular head materials—cast iron, aluminum, and magnesium—and it includes low, medium and high volume production equipment. A list of this experience and pictures of some of the parts involved are shown on the following pages.

Idea

The photo at the left shows a finish machining station in a system that produces aluminum cylinder heads with hardened valve seats and valve guide bushings inserted in them. This station performs finish reaming of the valve guide holes and generating of the valve seat chamfers. Servo driven slide is employed.

CYLINDER HEAD EXPERIENCE

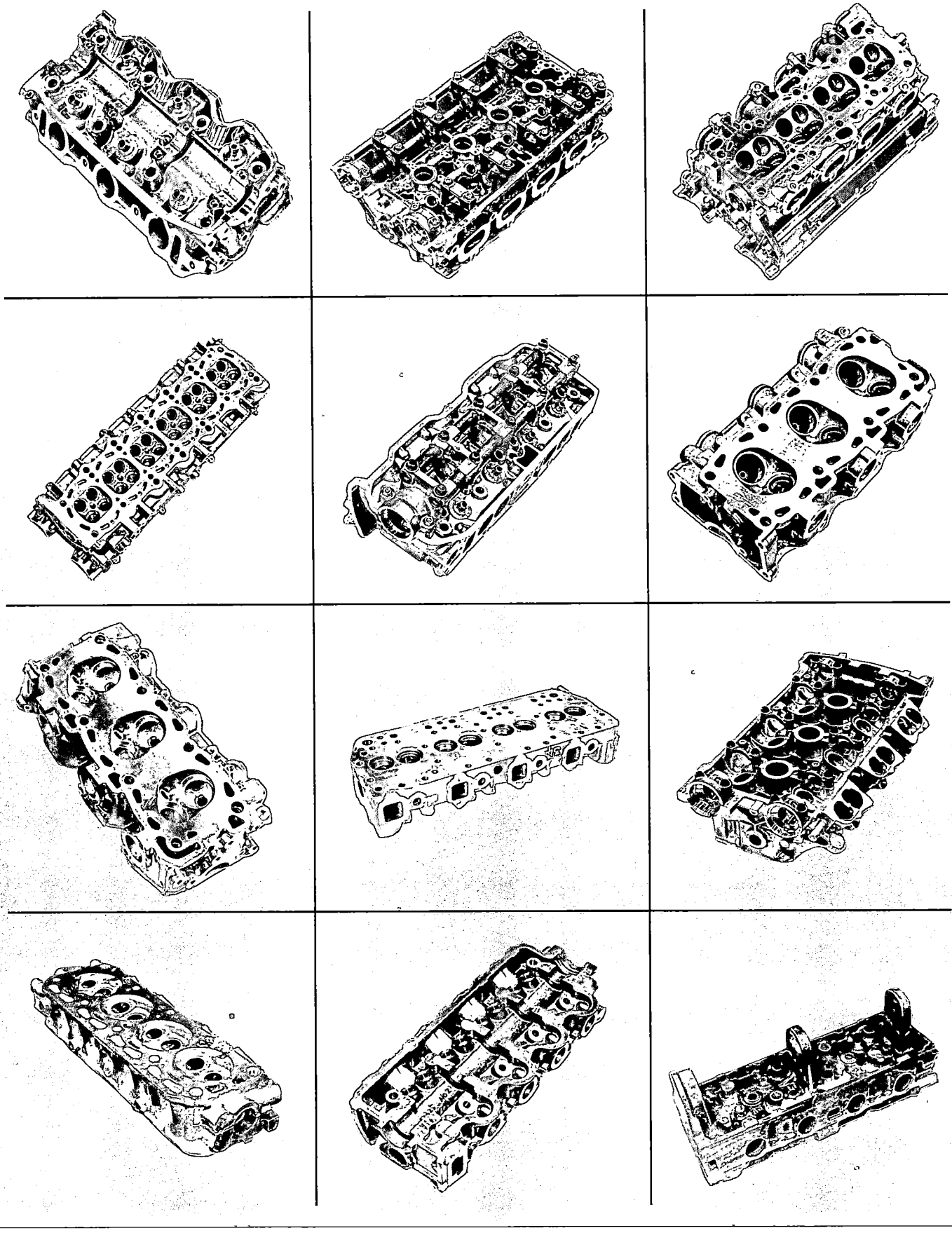
1949 Reo Lansing
(1 machine)
1949 Continental Motors Co.
Michigan
(1 machine)
1949 Curtiss Wright Woolridge
(1 machine)
1950 Ford Cleveland Engine
Plant
(1 machine)
1951 Continental Motors Co.
Michigan
(1 machine)
1951 Curtiss Wright Woolridge
(1 machine)
1951 AVCO Lycoming PA
(1 machine)
1951 GMC Chevrolet Flint
Engine
(4 machines)
1952 Curtiss Wright Woolridge
(3 machines)
1953 GMC Electromotive
Division
(3 machines)
1955 GE Schenectady
(2 machines)
1955 GMC Oldsmobile Division
(5 machines)
1958 GMC Detroit Diesel Allison
(1 machine)
1967 Hindustan Motors India
(23 machines)
1968 Nissan Motor Co. Japan
(1 machine)
1970 White Motor Cleveland
(11 machines)
1971 Nissan Motor Co. Japan
(1 machine)
1972 British Leyland Ltd.
Australia
(9 machines)
1973 GMC Detroit Diesel Allison
(1 machine)
1973 Nissan Motor Co. Japan
(1 machine)
1973 Daimler Benz Germany
(1 machine)
1975 John Deere Waterloo
(9 machines)
1975 Hyundai Motor Co. Korea
(3 machines)
1976 Toyota Motor Co. Japan
(2 machines)
1976 Massey Ferguson-Perkins
Diesel Ohio
(9 machines)
1976 Perkins Engines Co.
England
(1 machine)
1977 ITM Iran
(15 machines)
1977 Toyota Motor Co. Japan
(2 machines)
1978 Rolls Royce Motors Ltd.
England
(2 machines)
1978 Stankoimport U.S.S.R.
(3 machines)
1979 Toyota Motor Co. Japan
(2 machines)
1979 Yue Loong Motor Co.
Taiwan
(8 machines)
1979 British Leyland Ltd.
England
(4 machines)
1979 Ford Dagenham England
(1 machine)
1980 GMC Oldsmobile
(1 machine)
1980 GMC Detroit Diesel Allison
(1 machine)
1980 Ford Dagenham England
(1 machine)
1980 Nissan Motor Co. Japan
(1 machine)
1980 GMC Oldsmobile
(6 machines)
1980 Onan Division
(15 machines)



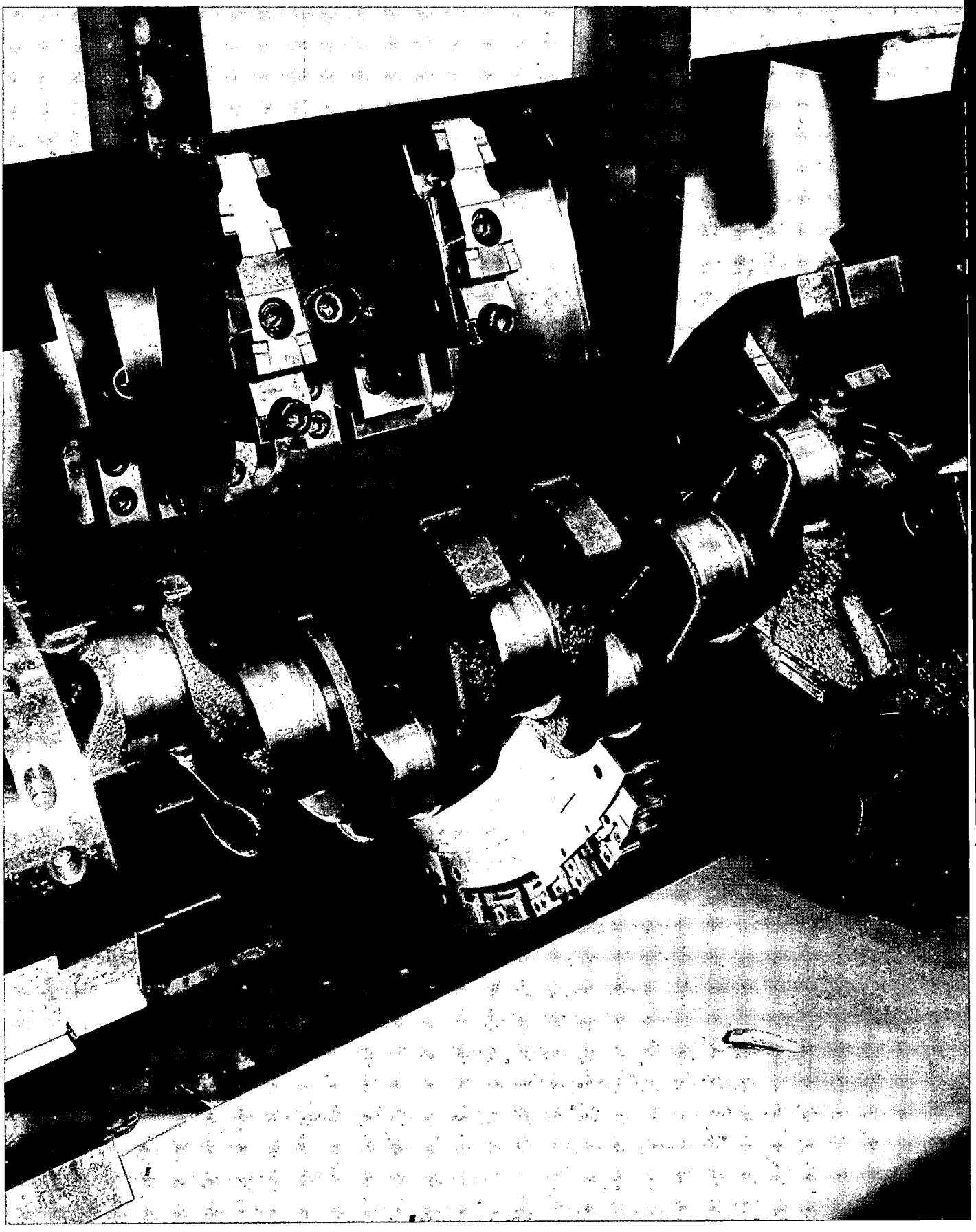
CYLINDER HEAD EXPERIENCE
308 MACHINES

Cylinder Head Experience (cont.)

1980 Ford Essex (2 machines)
1980 Ford Mexico (1 machine)
1981 Nissan Motor Co. Japan (1 machine)
1981 Ford Dagenham England (6 machines)
1982 Isuzu Motor Co. Japan (1 machine)
1982 Detroit Diesel (1 machine)
1983 Isuzu Motor Co. Japan (3 machines)
1983 Chrysler Mexico (6 machines)
1984 Isuzu Motor Co. Japan (1 machine)
1984 Ford Cologne Germany (1 machine)
1984 Yamaha Motor Co. Japan (2 machines)
1984 Niigata Engineering Japan (1 machine)
1985 Yamaha Motor Co. Japan (1 machine)
1985 Ford Ensite (1 machine)
1986 GMC Central Foundry (1 machine)
1986 Hyundai Motor Co. Japan (2 machines)
1986 Hyundai Motor Co. Japan (1 machine)
1987 Beijing Jeep Corp. PRC (4 machines)
1987 Hyundai Motor Co. Japan (2 machines)
1987 Yamaha Motor Co. Japan (1 machine)
1988 Mitsubishi Japan (3 machines)
1988 Yamaha Motor Co. Japan (4 machines)
1988 Hyundai Motors Korea (1 machine)
1988 Chrysler Trenton (1 machine)
1988 Mercury Marine (1 machine)
1988 Ford Dagenham England (4 machines)
1988 Yamaha Motor Co. Japan (2 machines)
1988 Hyundai Motor Co. Japan (5 machines)
1989 Skoda (1 machine)
1989 Yamaha Motor Co. Japan (3 machines)
1989 Hyundai Motors Korea (4 machines)
1990 Isuzu Japan (2 machines)
1990 Mitsubishi Japan (3 machines)
1990 Hyundai Motors Korea (2 machines)
1991 Mitsubishi Japan (2 machines)
1991 Hyundai Motors Korea (2 machines)
1991 Daihatsu Indonesia (2 machines)
1991 Chrysler Trenton (4 machines)



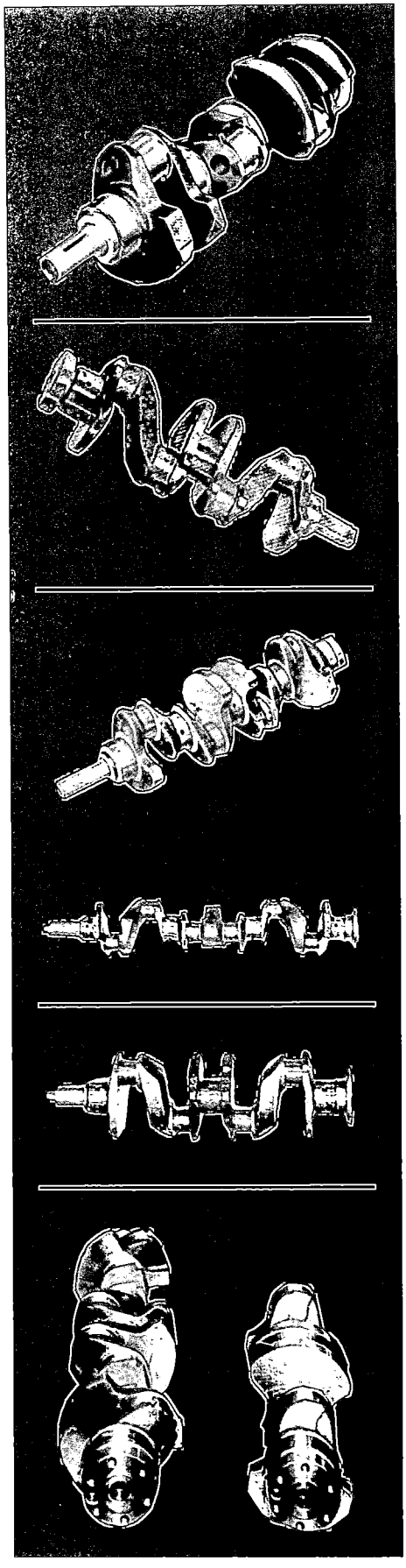
CRANKSHAFT EXPERIENCE
75 MACHINES



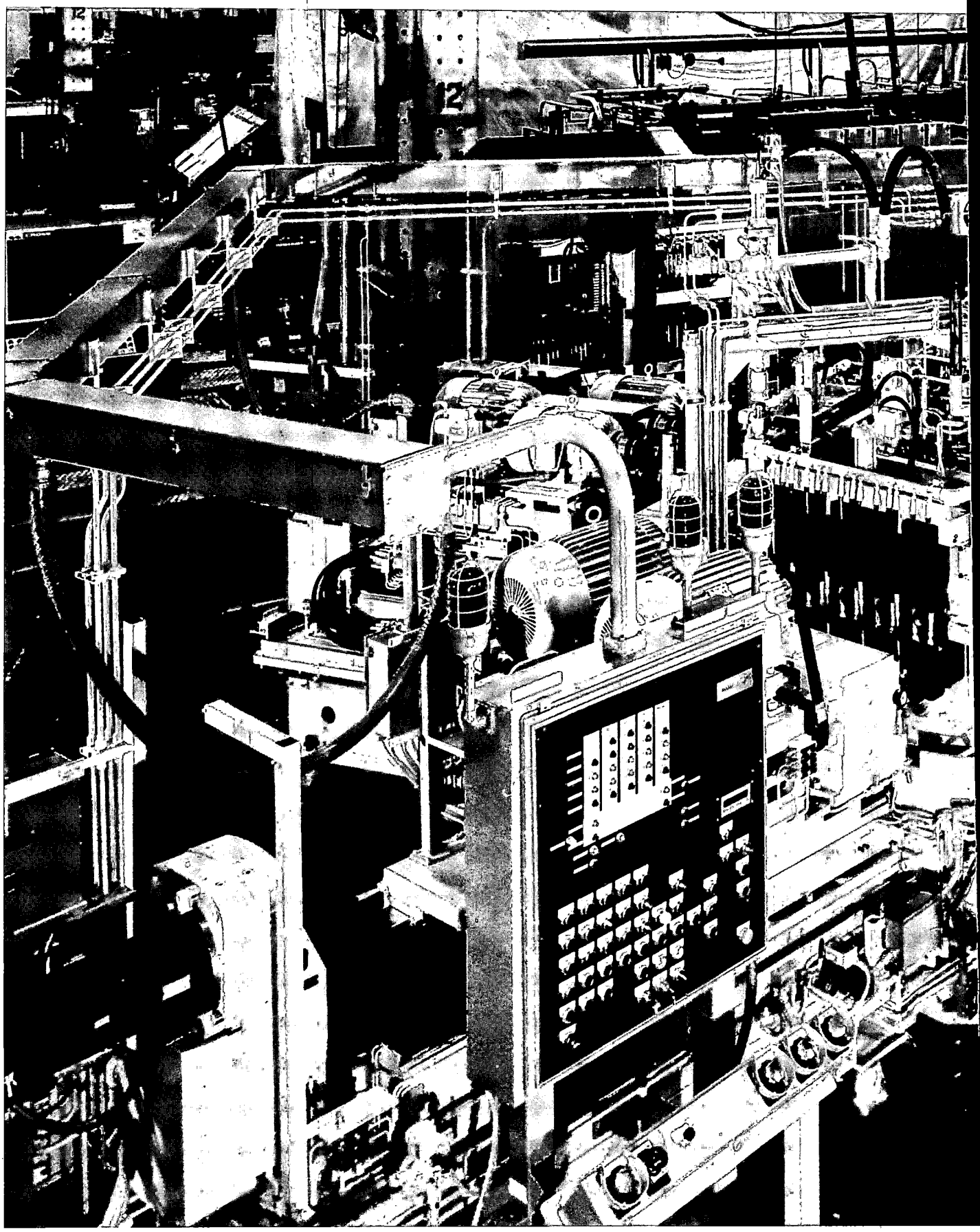
Idea

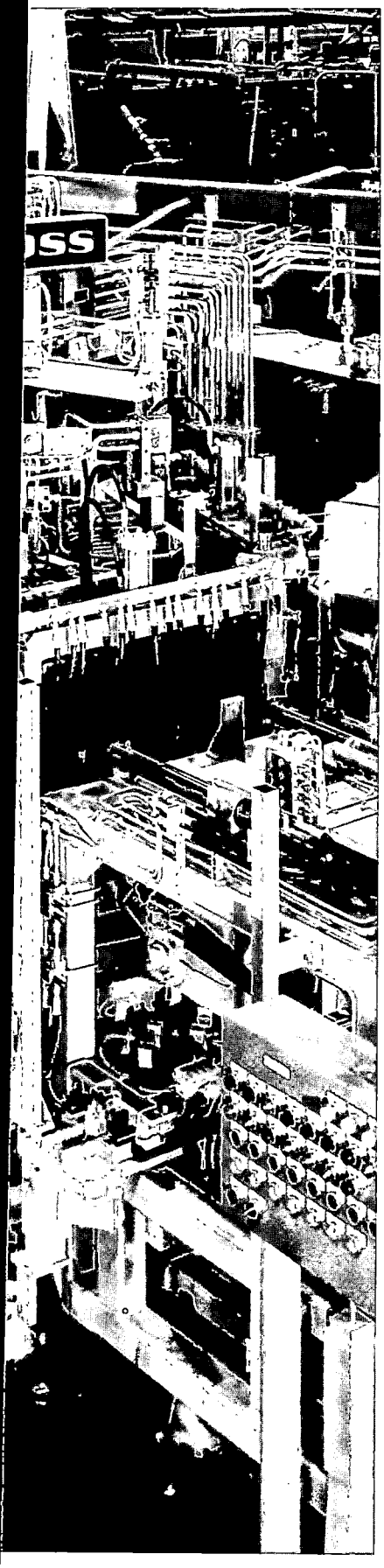
The crankshaft machining station shown here employs the broach-turning process to machine the crank pins. This technique minimizes inaccuracies caused by crank deflection encountered in conventional turning. Pin finish is also improved.

Other Cross crankshaft machining ideas include gundrilling of the oil holes, and multiple turning operations in transfer lines that utilize indexing tool turrets.



CONNECTING ROD EXPERIENCE
262 MACHINES

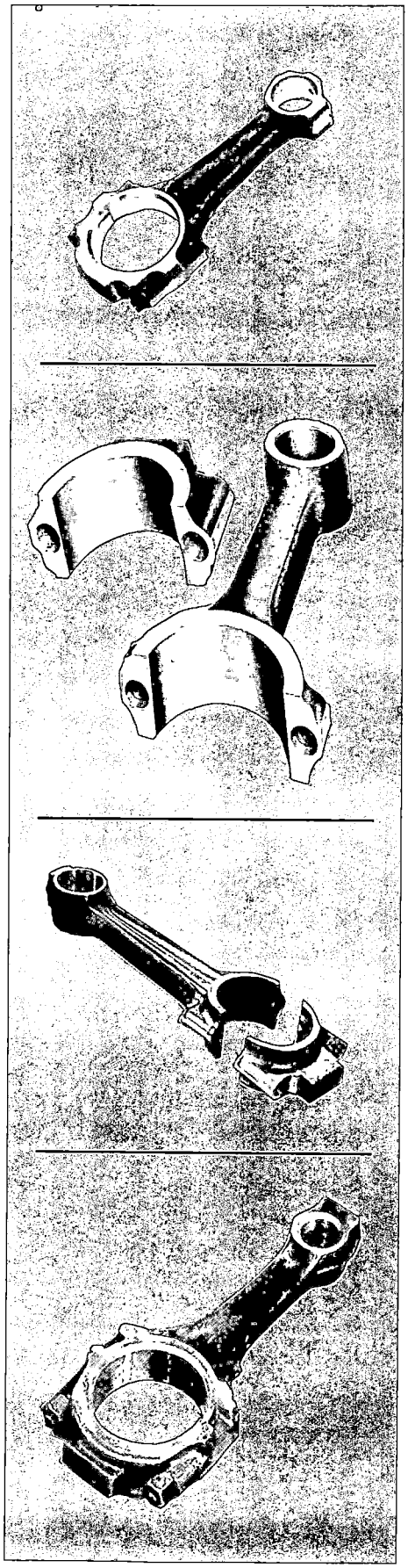




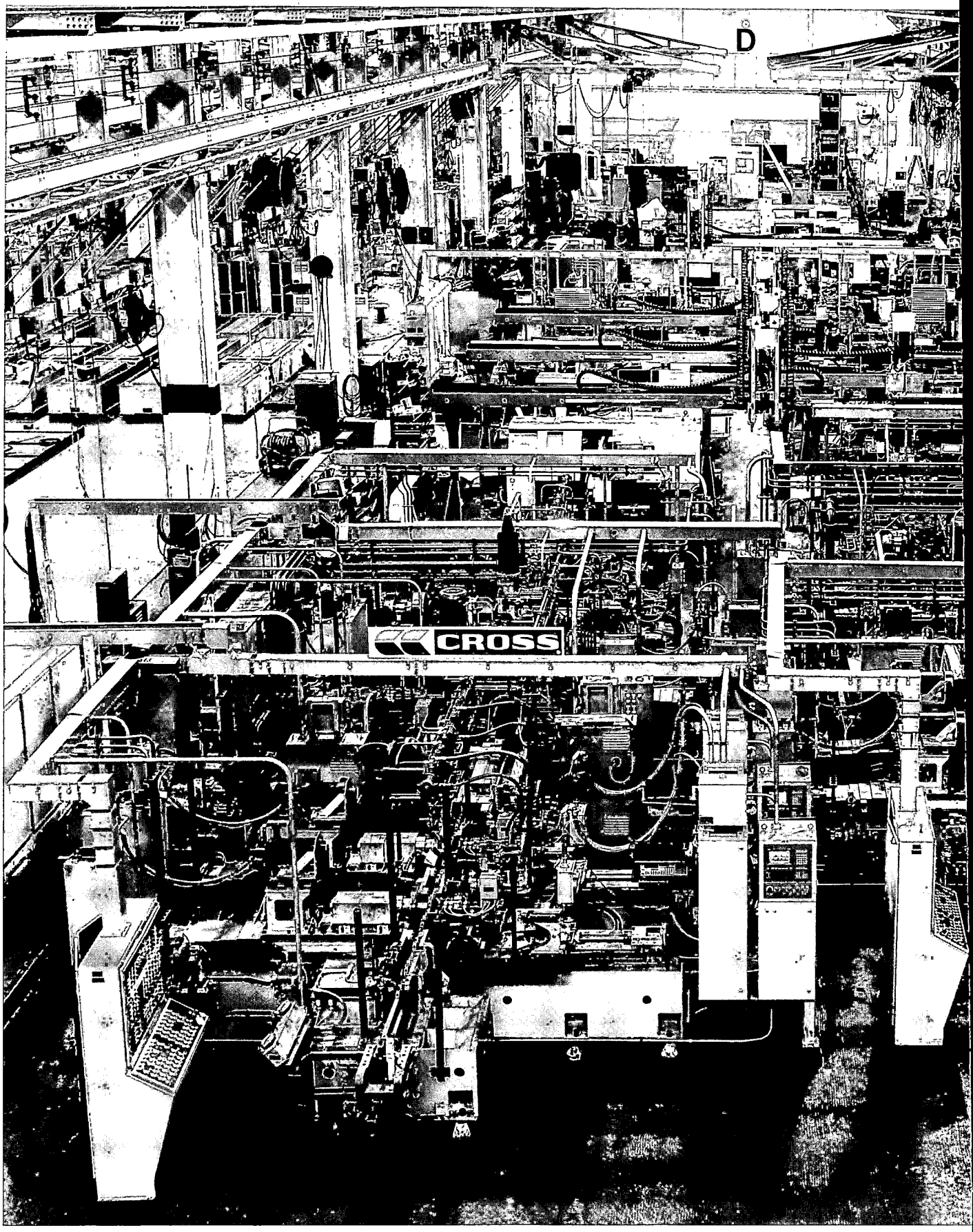
Idea

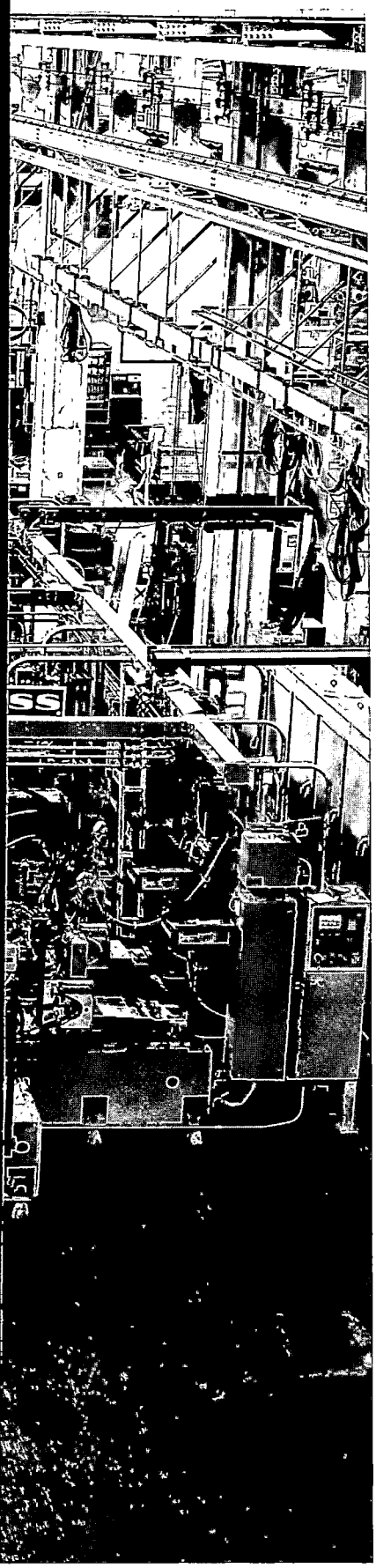
This dial indexing machine performs semi-finish and finish operations on connecting rod crankshaft and wrist pin bores. It processes three different parts with minimum changeover required due to a unique fixture and head design that accomodates different bore center distances.

The machine also features temperature-controlled boring heads and a boring tool coolant system that introduces coolant through the fixture clamps. This provides even coolant distribution and the ability to flush chips forward, ahead of the tool so that chips will not be recut or embedded into the bore surface thus causing poor quality finish or scrapped parts.



PISTON EXPERIENCE
1302 MACHINES

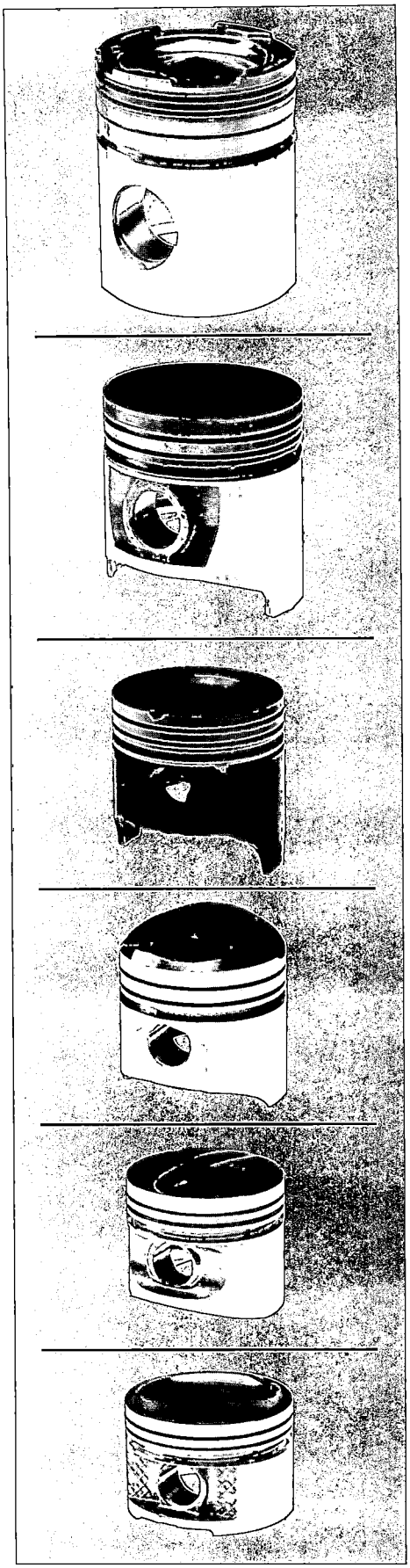




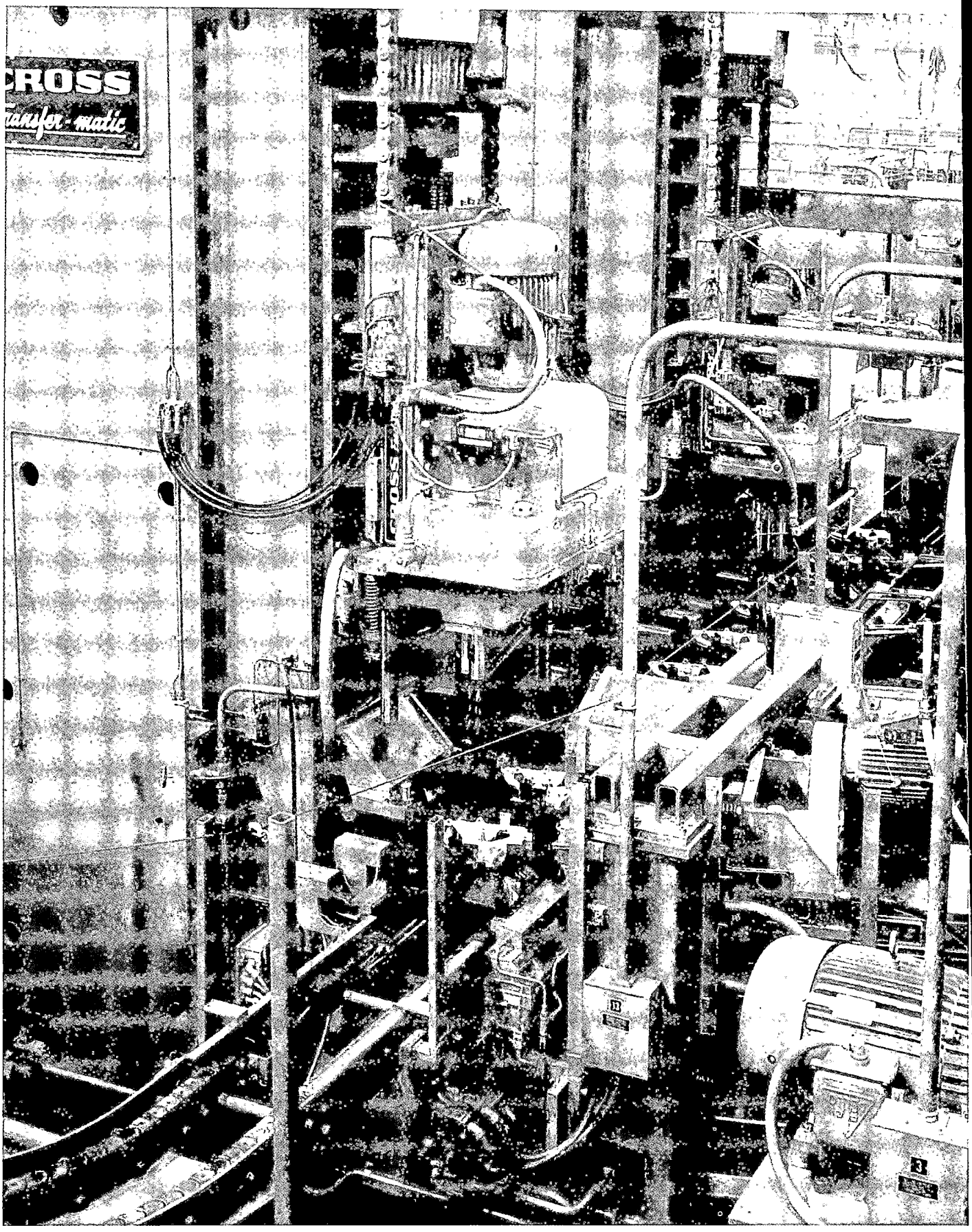
Idea

The system shown at left produces complete pistons. It embodies patented, state-of-the-art technology that allows turning operations to accurately duplicate critical complex piston oval shapes and ringland diameters to within single classification tolerances. The piston finish turning machine base is specially designed to provide superior damping characteristics, thereby allowing the production of specified part finish at very high speeds while operating in a normal shop environment. Since the turning axis is under full CNC control, the module is capable of machining almost any piston. This provides unparalleled flexibility for finishing various families of parts.

The turning machines employ a unique locating and clamping procedure that allows finishing the entire piston OD in a single chucking.

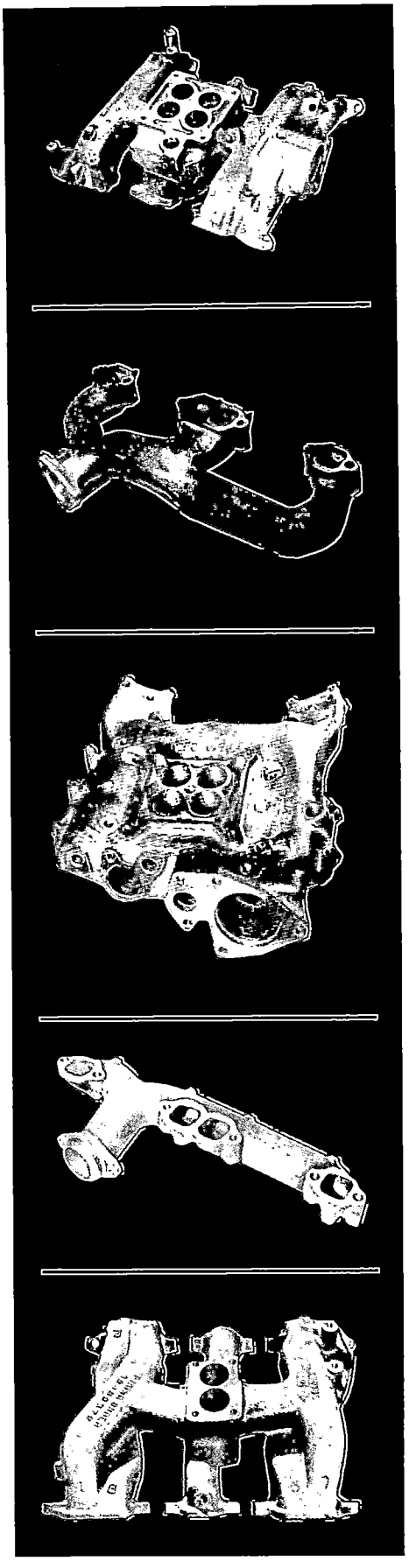


MANIFOLD EXPERIENCE
251 MACHINES

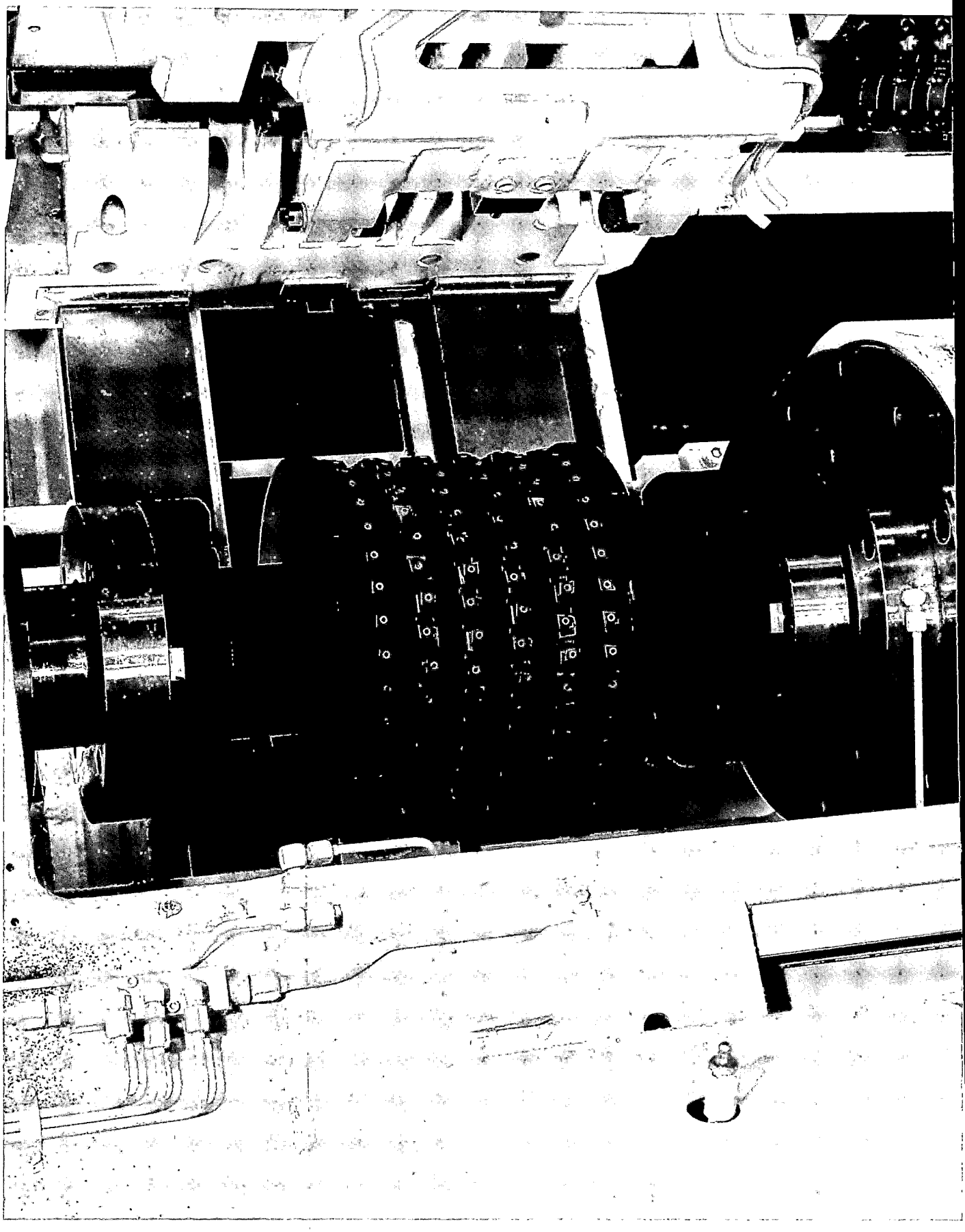


Idea

An aluminum intake manifold is being produced on this non-synchronous transfer machine. Pioneered by Cross, this type of metalcutting transfer machine is capable of achieving operating efficiencies of over 90% for several reasons: Because pallets will automatically accumulate ahead of a station, each station can cycle independently. This allows tools to be changed one station at a time without ever stopping the machine. Further, pallets accumulate at slow stations. Thus, when time wasting operations in need of adjustment, repair, etc., develop, the subsequent accumulation of pallets draws attention to the problem.



MISCELLANEOUS EXPERIENCE

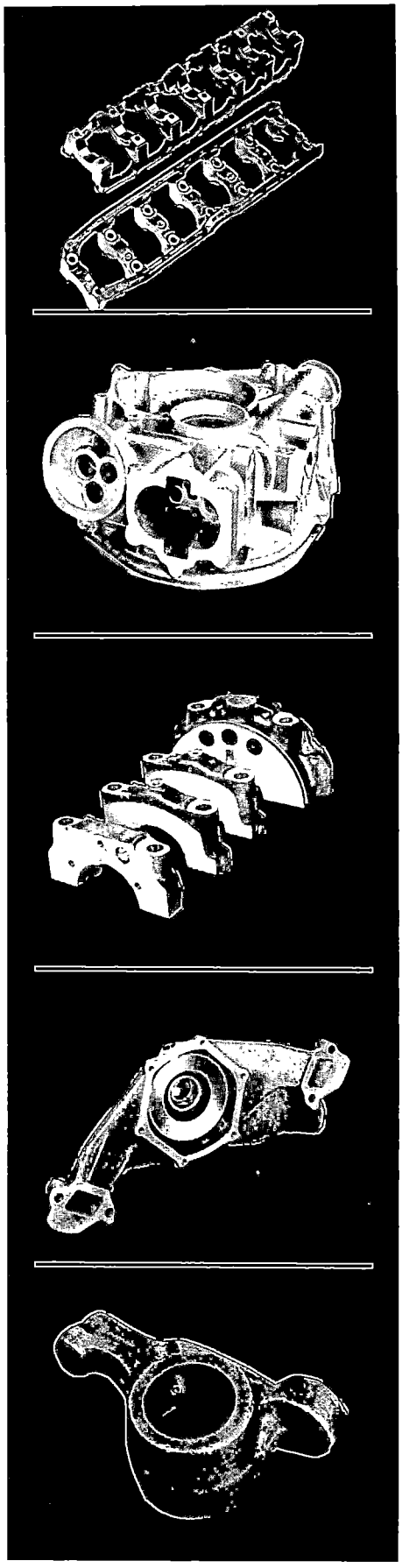


Idea

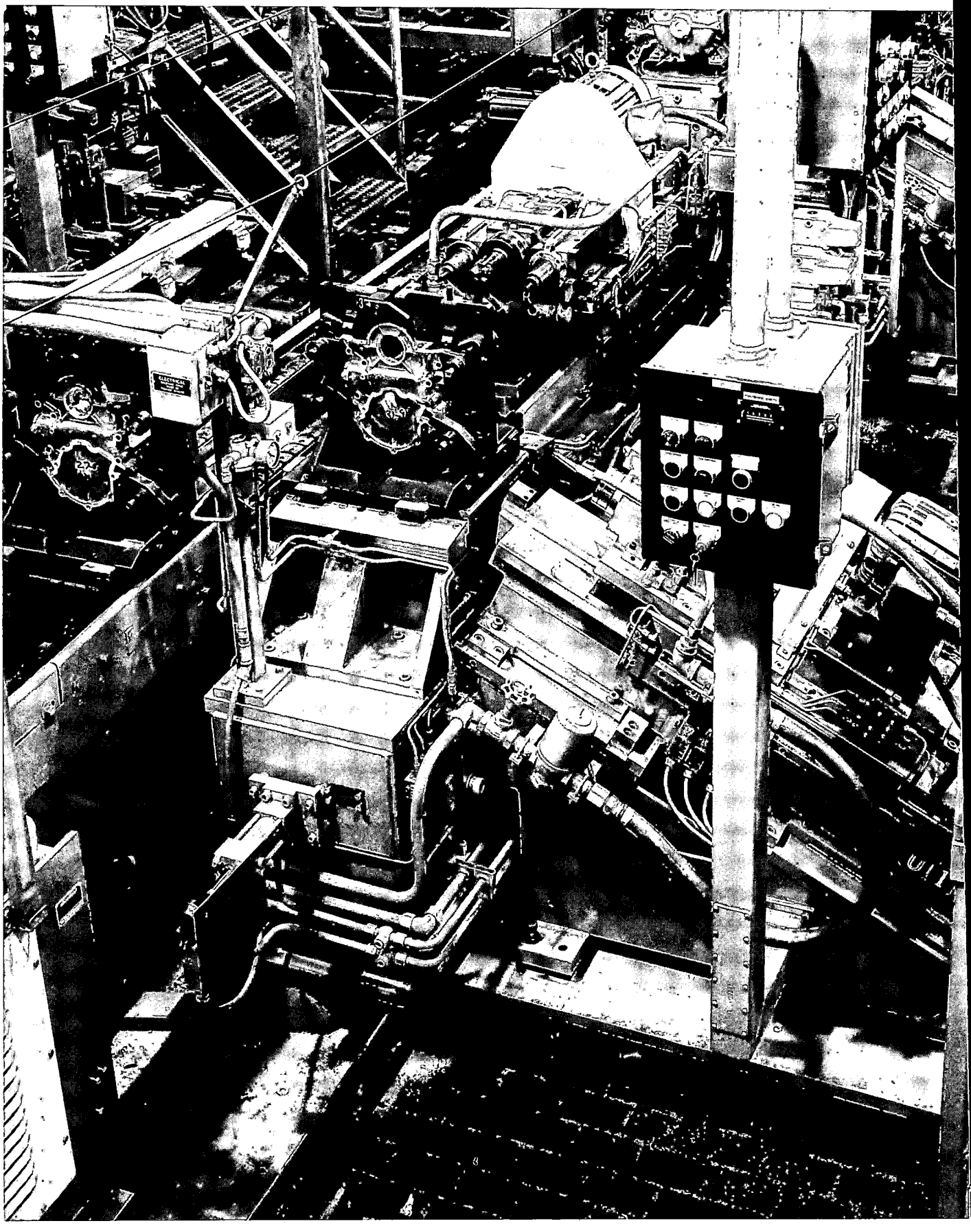
Among the parts shown in this "Miscellaneous" section are bearing caps, a part on which we have extensive experience – hundreds of our machines are in operation throughout the world.

Typical of the advanced technology employed in these machines is the bearing cap splitting station shown here. It features a dual-drive head that drives both ends of the cutter arbor thereby minimizing torsional windup in the arbor and drive train. This improves part finish. It improves tool life and it reduces wear on the drive gearing and spindle bearings.

These stations also utilize a HP monitoring and adaptive feed system that slows the feed rate when part material hard spots are encountered. It initiates cutter retraction when reduced feed rate duration exceeds a pre-set limit. And it signals the need for tool change when the HP limit in normal feed is exceeded.

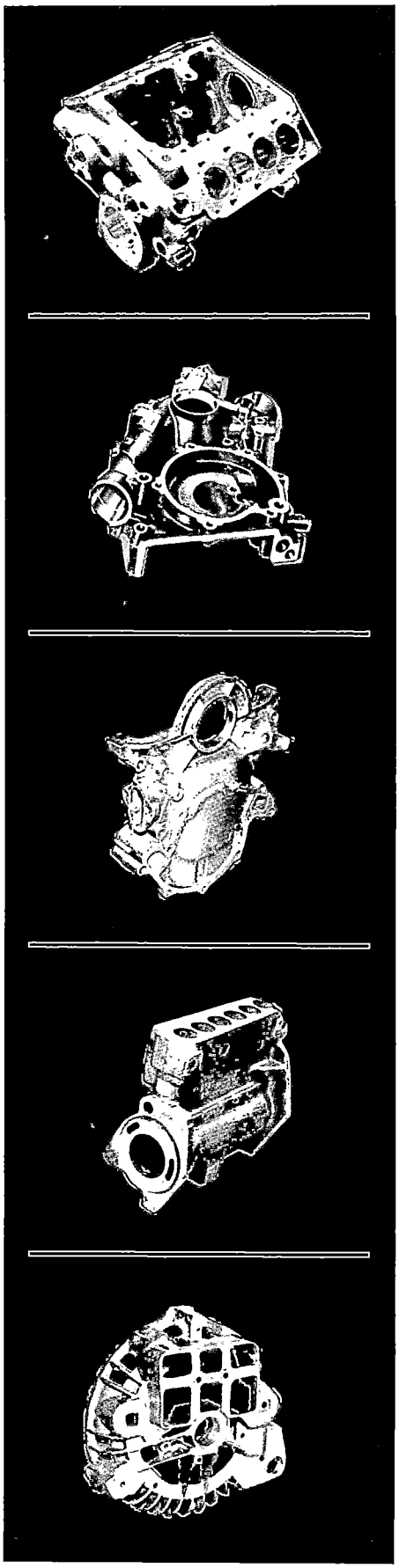


MISCELLANEOUS EXPERIENCE

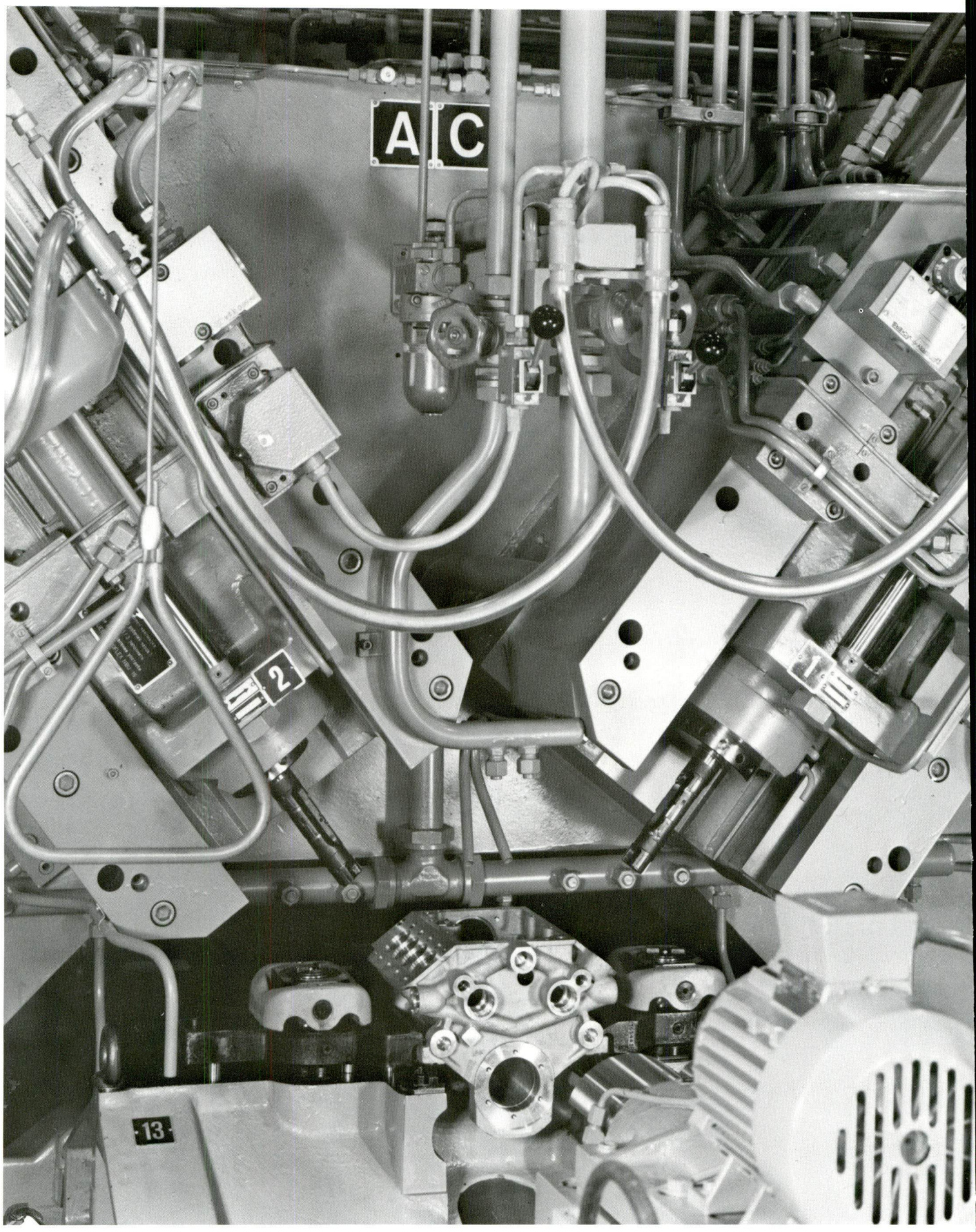


Idea

This is an off-line station on a machine that produces aluminum engine front covers. The station is equipped with electronic sensing equipment that permits holding a critical tolerance between the crank bore centerline and the depth of the sensor hole. The up-angle unit bores the sensor hole. It carries a gaging device that controls its feed depth by contacting a reference surface on the crank bore finishing spindle on the horizontal slide to its right.

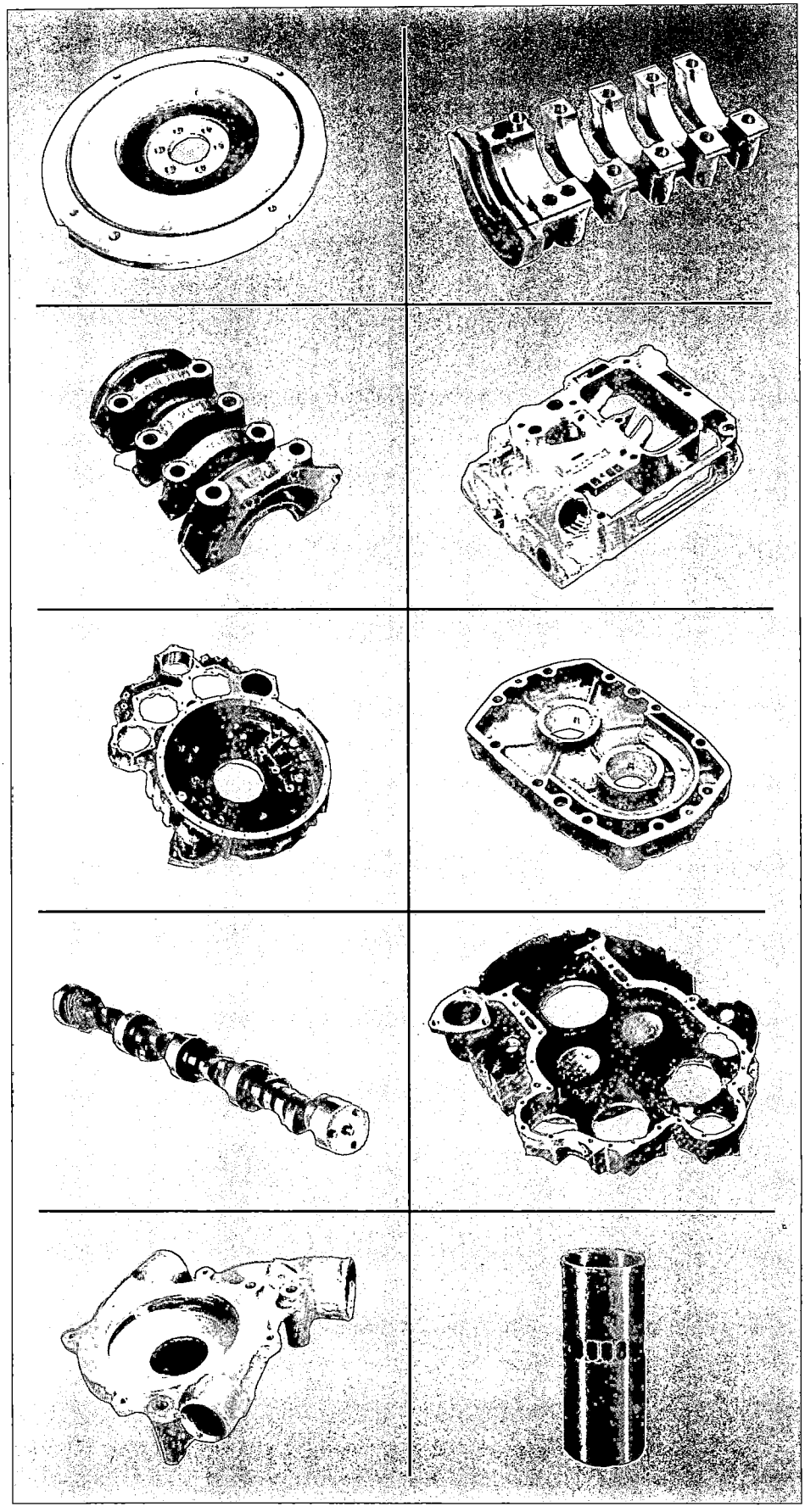


MISCELLANEOUS EXPERIENCE

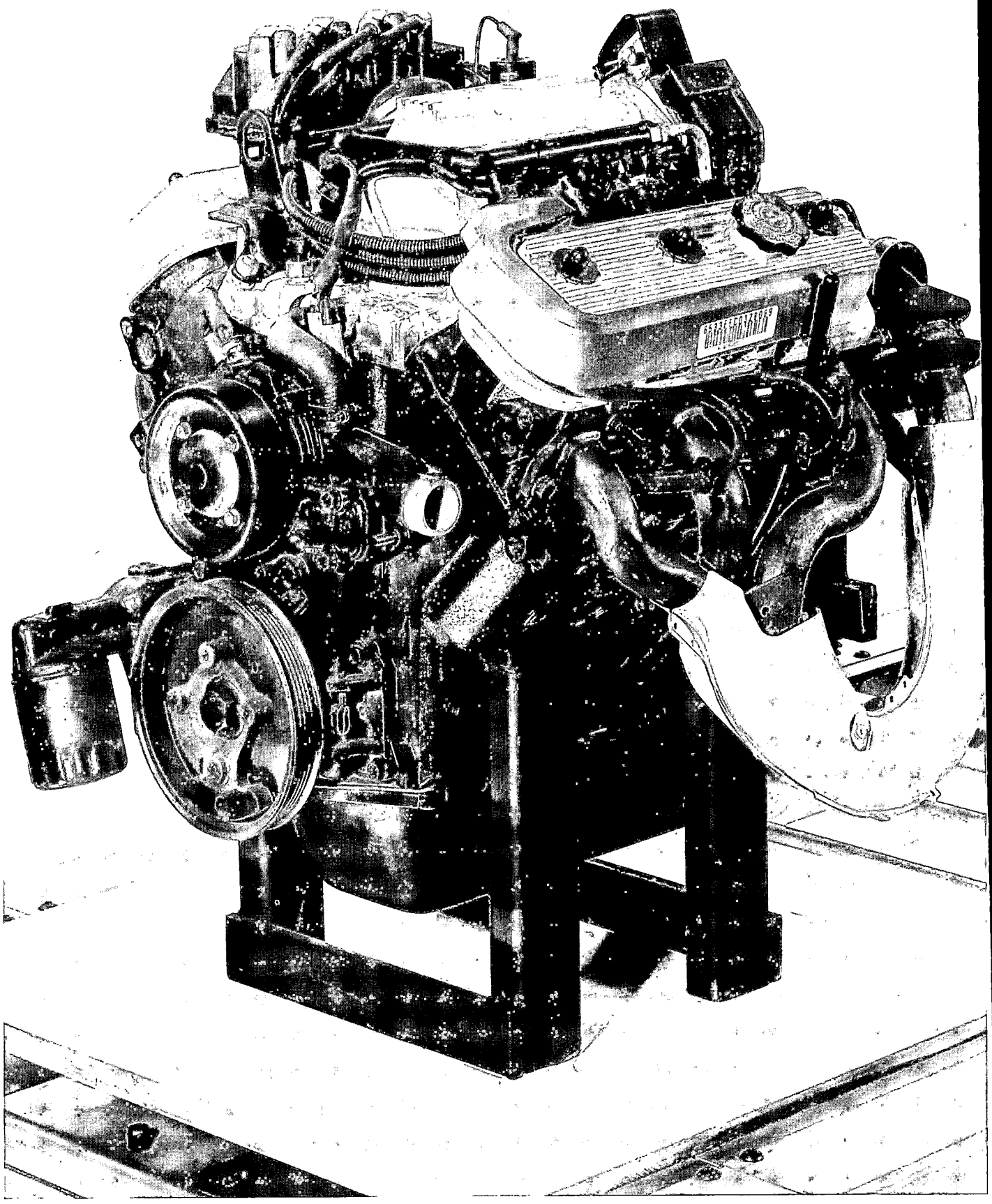


dea

his is a close-up view of a finish oring station on a machine that roduces aluminum fuel injector ump housings. This part is onsidered by many o be one of the most difficult o manufacture. Its design em- odies a challenging combination f close tolerance requirements, nd very unusual machining perations — which account for he fact that very few companies n the world are capable of roducing these housings.



ENGINE ASSEMBLY EXPERIENCE

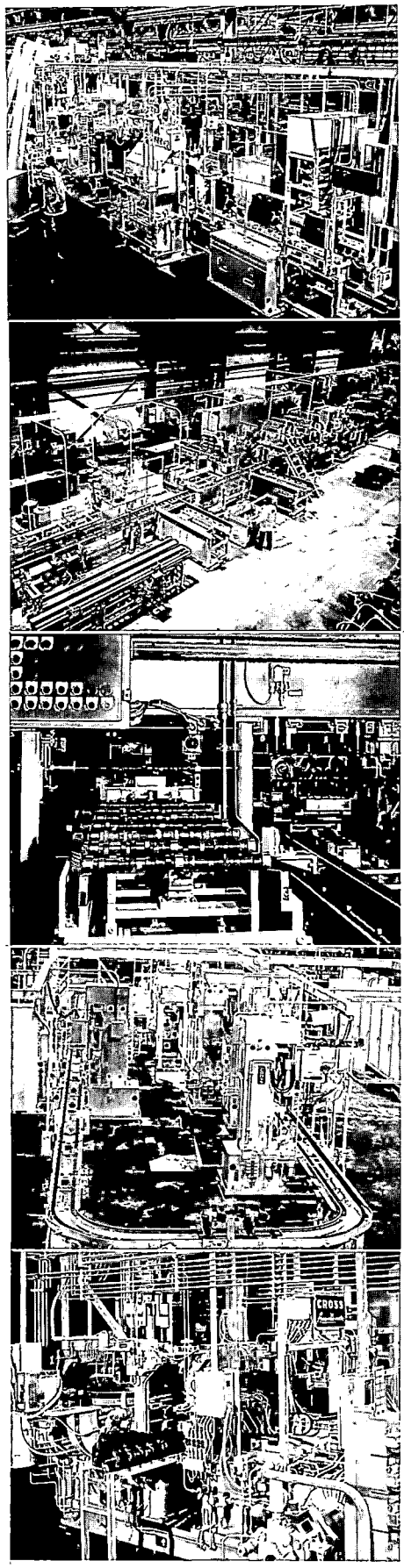


State-Of-The-Art Assembly Systems Technology

Giddings & Lewis offers you an unprecedented array of assembly experience covering all phases of engine assembly.

Advanced technology employed in current equipment includes: robotic assembly; multiple wrist changing robotic assembly; multi-axis force sensing assembly; vision systems; real time SPC; escort memory systems; and several types of synchronous and non-synchronous transport systems.

This is a separate self-contained organization that is totally dedicated to assembly operations and equipment. It has exceptional depth in assembly technology and methods, and can build and ship systems from plants located in five different countries.

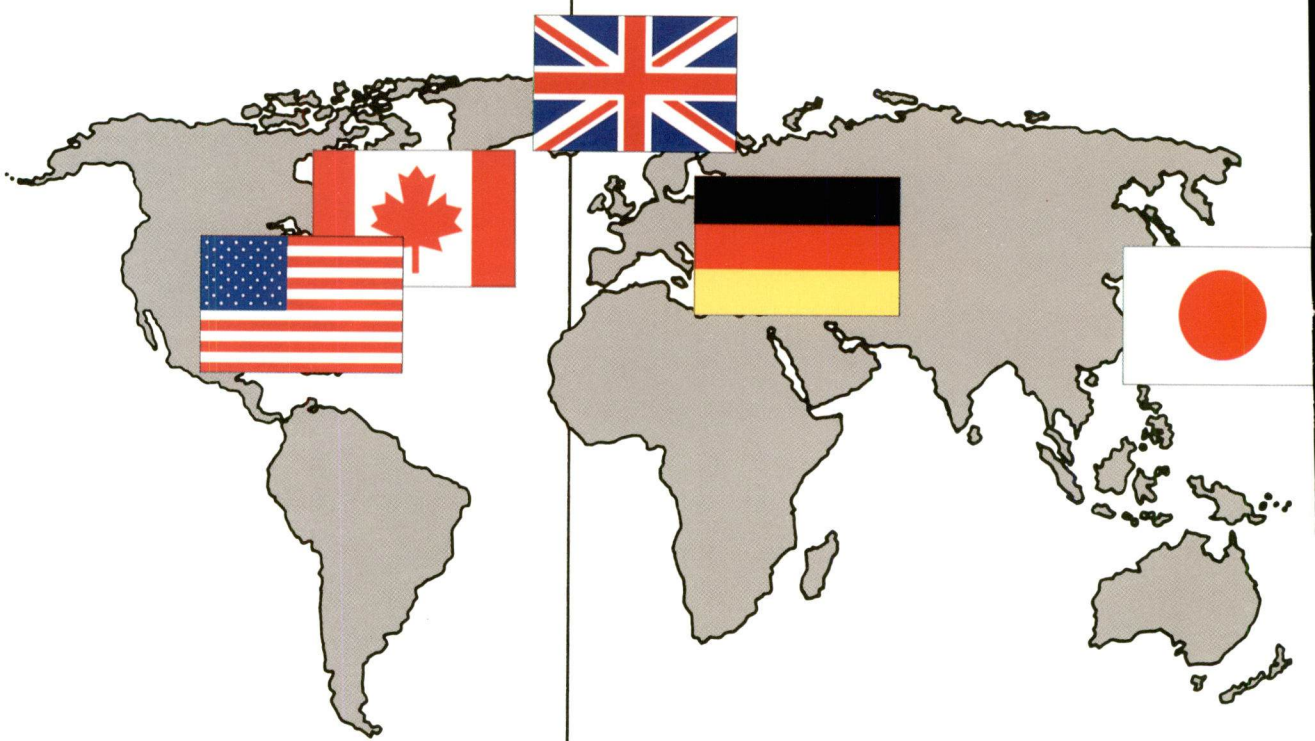


GLOBAL SOLUTIONS

No brochure can do justice to the advancements that have been achieved at Giddings & Lewis in recent years. The spirit, attitude, and focus on meeting your needs — the attributes that have made us a world leader in manufacturing systems — are stronger than ever.

Few companies in the world offer you the combination of state-of-the-art technology and global resources available from Giddings & Lewis.

We welcome your inquiry for a single machine, or an entire manufacturing system.

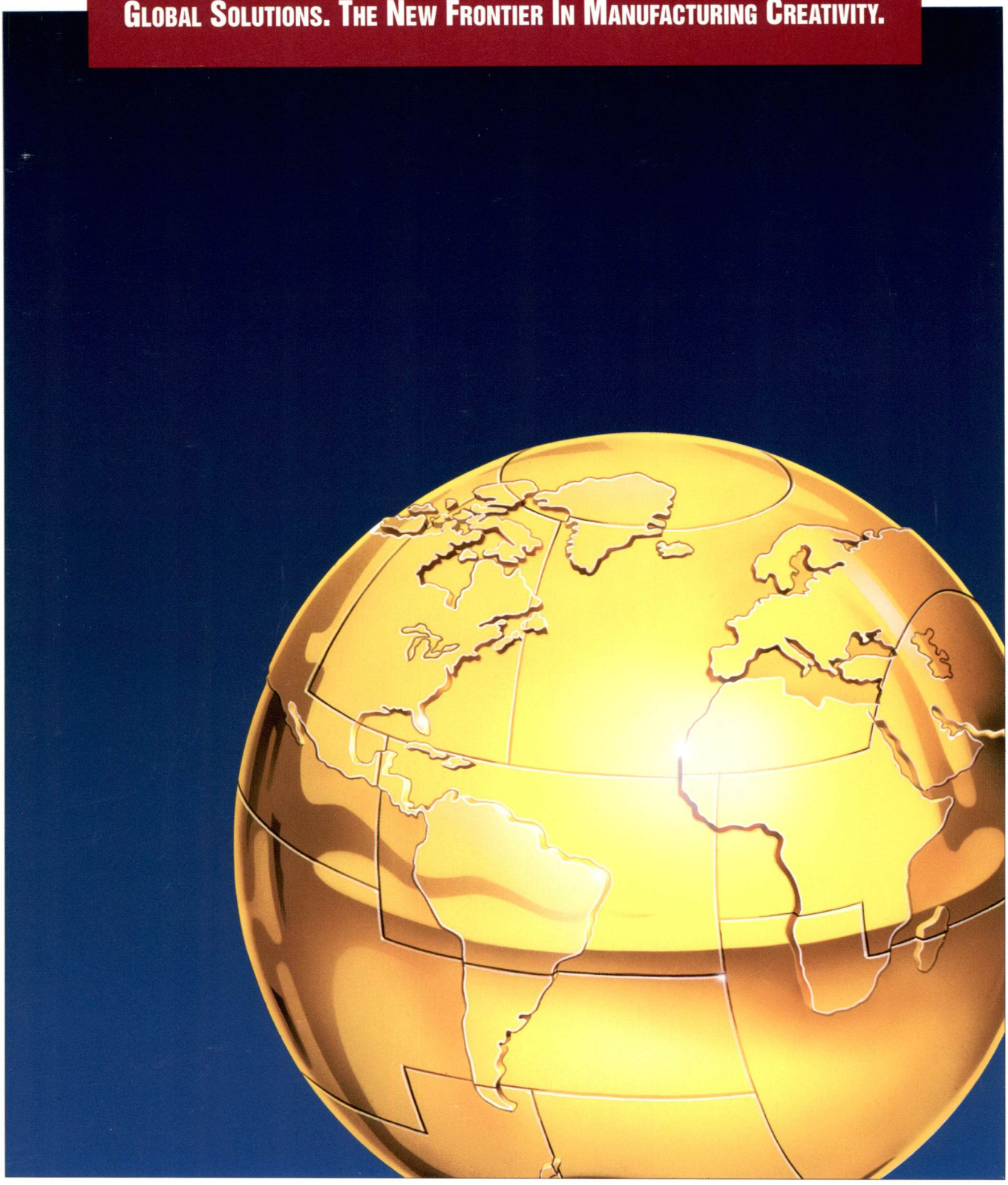


GIDDINGS & LEWIS®

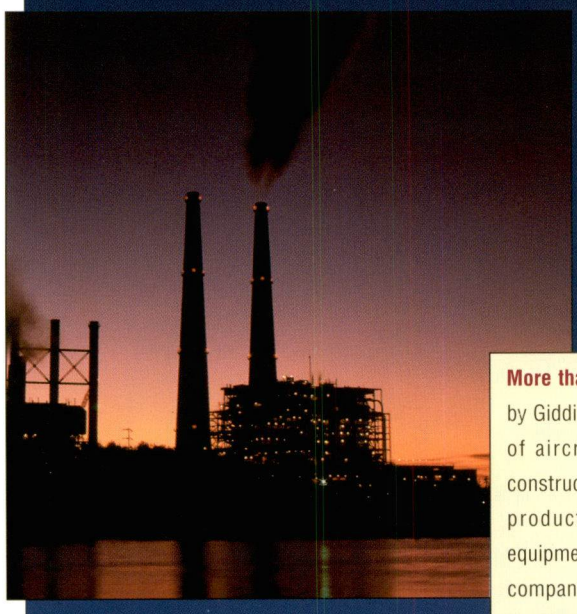
INTEGRATED AUTOMATION

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Telephone (313) 293-3000

GLOBAL SOLUTIONS. THE NEW FRONTIER IN MANUFACTURING CREATIVITY.



GIDDINGS & LEWIS®



More than 250 industries are served by Giddings & Lewis. Manufacturers of aircraft and aircraft engines, construction equipment, automotive products, and power generation equipment are among the worldwide companies that rely on Giddings & Lewis for integrated manufacturing solutions.

GIDDINGS & LEWIS. GLOBAL SOLUTIONS FOR GLOBAL MANUFACTURING NEEDS.

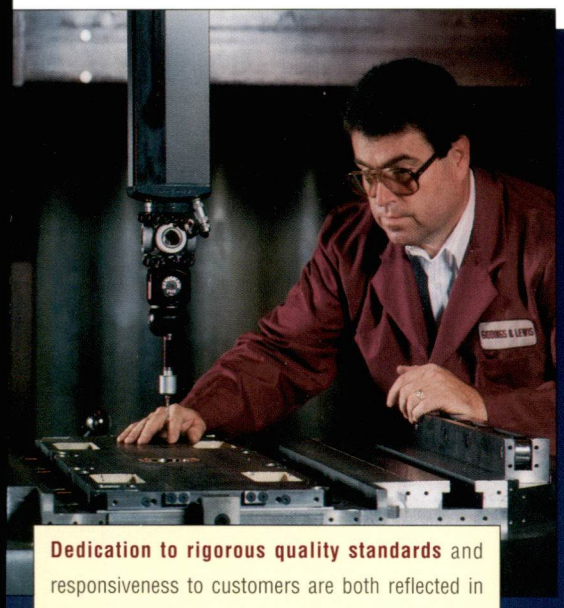
In recent years, the world of manufacturing has been transformed. New frontiers have been opened; new vistas of opportunity have come into view.

Yet, today's manufacturers also confront new challenges. Keeping pace with new products and production technologies. New demands for quality and cost control. And tough new competitors in the global marketplace.

Perhaps more than ever before, today's manufactur need creative, new ideas — and a partner that can deli comprehensive, long-term, *global* solutions.

To meet these needs, Giddings & Lewis h transformed itself — in one of the most exciti expansions in our industry.

We have become the single-source supplier comprehensive, fully-integrated manufacturing solutio



Dedication to rigorous quality standards and responsiveness to customers are both reflected in Giddings & Lewis' product design and manufacturing precision. Here, a coordinate measuring machine verifies exacting tolerances as part of a process control run-off.



Manufacturing Solutions

• Integrated Cellular Systems & Flexible Manufacturing Systems • Medium- & High-Volume Flexible Transfer Lines
• Special Machining Systems
• Vertical & Horizontal Turning Centers
• Vertical & Horizontal Machining Centers.
• CNC Controllers & Cell Controllers
• Machine Remanufacturing & Control Retrofitting
• Planer Mills
• Broaching Machines
• Accessories
• Tooling & Fixtures • Drill Point Grinders
• Contouring Heads
• Tool Presetters
• Subcontracting • Gray & Ductile Iron Castings (Meehanite®)

Assembly Solutions

• Synchronous & Non-Synchronous Assembly Systems
• Synchronous Standalone Assembly Machines
• Automotive Body Assembly (Welding) Systems
• Special Application Assembly Machines
• Simultaneous Engineering

Measurement & Control Solutions

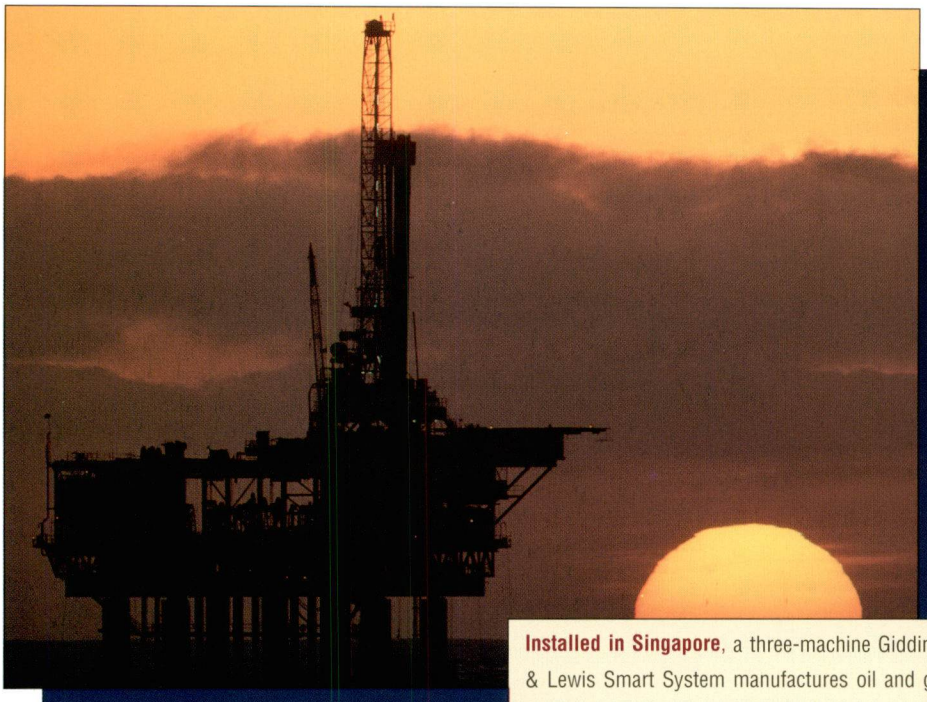
• Manufacturing Consulting
• Manufacturing Systems Integration
• Programmable Industrial Computers
• Coordinate Measuring Machines
• Metrology Equipment
• Control Software Solution Packages
• In-Process Gauging
• Printed Circuit Boards

th dramatically increased resources, product lines, and ilities in North America, Europe and Asia.

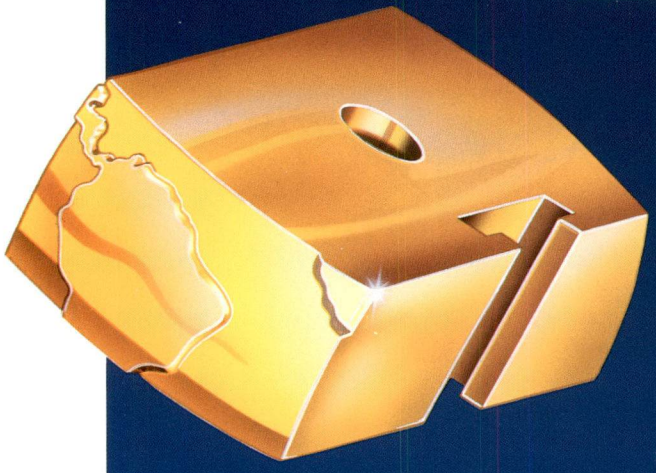
Giddings & Lewis now offers one of the world's most mplete arrays of high-tech manufacturing and sembly systems. "Smart Systems," able to meet the dest possible variety of production challenges. And cked by the world's best engineering and support.

Operating as a streamlined, worldwide organization, ddings & Lewis has the flexibility customers need to make their projects run smoothly — combined with the size and diversity required to meet manufacturing challenges around the world.

Global solutions for global manufacturing needs. The following pages show how the people at today's Giddings & Lewis put the pieces together to help boost productivity, reduce costs and improve quality.



Installed in Singapore, a three-machine Giddings & Lewis Smart System manufactures oil and gas production equipment used in the Far East. It was built at the Giddings & Lewis plant in Arbroath, Scotland.



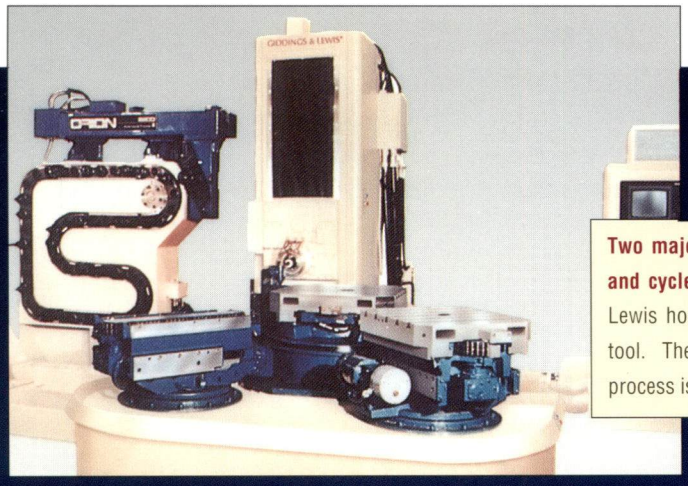
MANUFACTURING SOLUTIONS.

Giddings & Lewis has earned its position of worldwide leadership in manufacturing creativity.

Backed by the company's comprehensive, integrated resources — from our foundry operation to our unrivalled software expertise — Giddings & Lewis engineers specialize in creating flexible manufacturing solutions that cut costs and maximize productivity in a wide variety of applications.

Today, our manufacturing product line ranges from standalone automated machine tools to versatile Sm Manufacturing Systems and flexible, high-volu transfer lines.

New technical resources, new facilities, and n products now allow Giddings & Lewis applicati engineers to address the full spectrum of worldwi manufacturing needs with comprehensive, glob solutions.

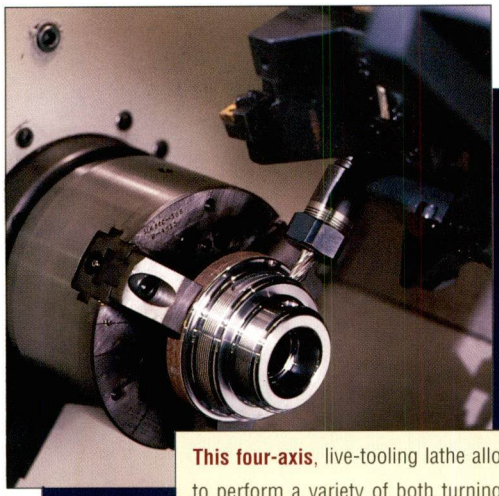


Two major valve manufacturers cut scrap rates and cycle times by 25% by using a Giddings & Lewis horizontal machining center and a U-head tool. The turning function for the manufacturing process is provided by the U-head tool.



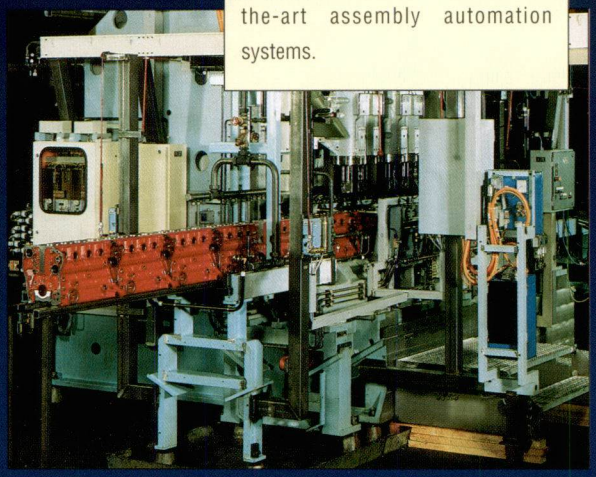
This eight-machine Smart Manufacturing System at Caterpillar's Aurora, Illinois plant can automatically process 50 different construction equipment parts, ranging from 6-inch (150-mm) to 36-inch (920-mm) cube size. The machine tools are served by four self-guided vehicles. The advanced, adaptive control system provides in-process measurement and tool compensation, scheduling, tool management, and a variety of MIS reports.





This four-axis, live-tooling lathe allows the operator to perform a variety of both turning and machining operations on small parts with a single machine. With adaptive controls and automated probing operations, quality and productivity are improved substantially.

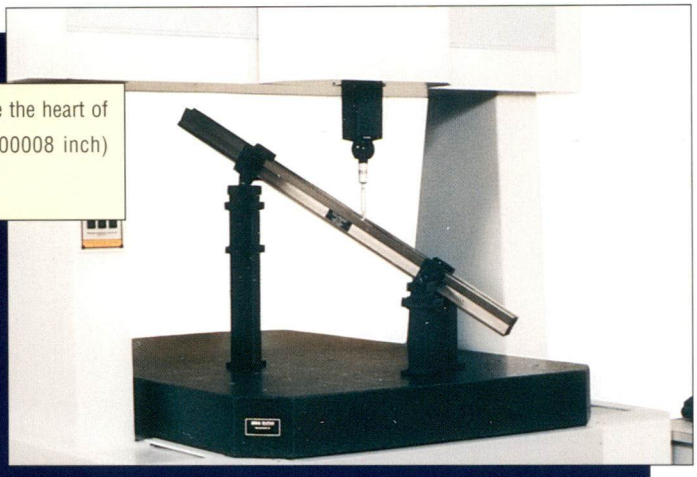
High-volume flexible transfer lines enable manufacturers such as auto-makers to machine families of parts on one line with maximum efficiency. One such system, produced in our European operation, can machine up to 100 cylinder blocks per hour for Saab-Scania. Giddings & Lewis' transfer lines perfectly complement our state-of-the-art assembly automation systems.







Manufacturing cycle time on Boeing wing flap tracks will be cut by hundreds of hours with a two-machine Smart System. A unique fixture developed by Giddings & Lewis holds the flap track in precise position to assure matched drilling and boring accuracies on both sides.



Coordinate Measuring Machines, a new addition to Giddings & Lewis' product lines, are the heart of flexible inspection systems. This high-precision package provides two-micron (0.00008 inch) accuracy at speeds many times faster than any other CMM in its accuracy range.



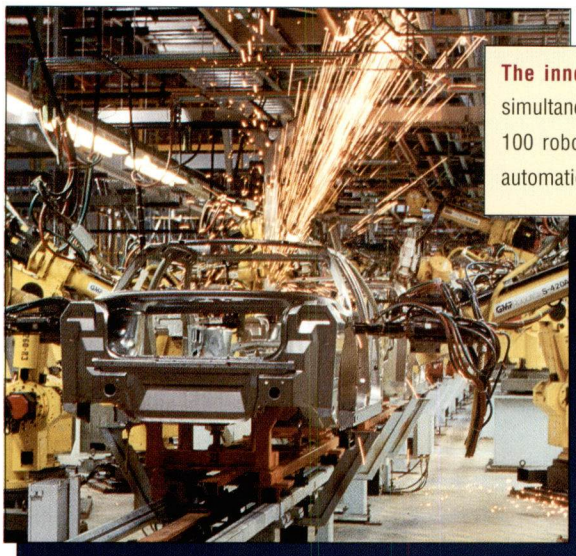
The world's fastest programmable control, the Giddings & Lewis PiC-900®, combines closely coupled logic and motion control. It can sense and react to a signal in 50 millionths of a second. In one application for a packaging customer, the PiC-900 improved the throughput of the packaging line by 25 percent and reduced changeover time by 10 per cent.

MEASUREMENT & CONTROL SOLUTIONS.

Giddings & Lewis is a single-source supplier of industrial automation control hardware and software, consulting services, system integration, and measurement systems.

Led by the PiC-900® industrial motion control computer, our automation control products have been applied to a broad range of tasks, from the packaging of Kool-Aid® to aircraft control manufacturing to high-speed paper production.

Special capabilities in coordinate measuring machines and other measurement systems have broadened our focus to cover an even wider variety of processing applications.



The innovative body assembly line at the new Saturn automotive plant resulted from extensive simultaneous engineering by the Giddings & Lewis and Saturn teams. Industry firsts include the use of over 100 robots and an overhead monorail transport system. The elimination of heavy, floor-mounted hard automation improves maintenance accessibility and adds flexibility for future models.



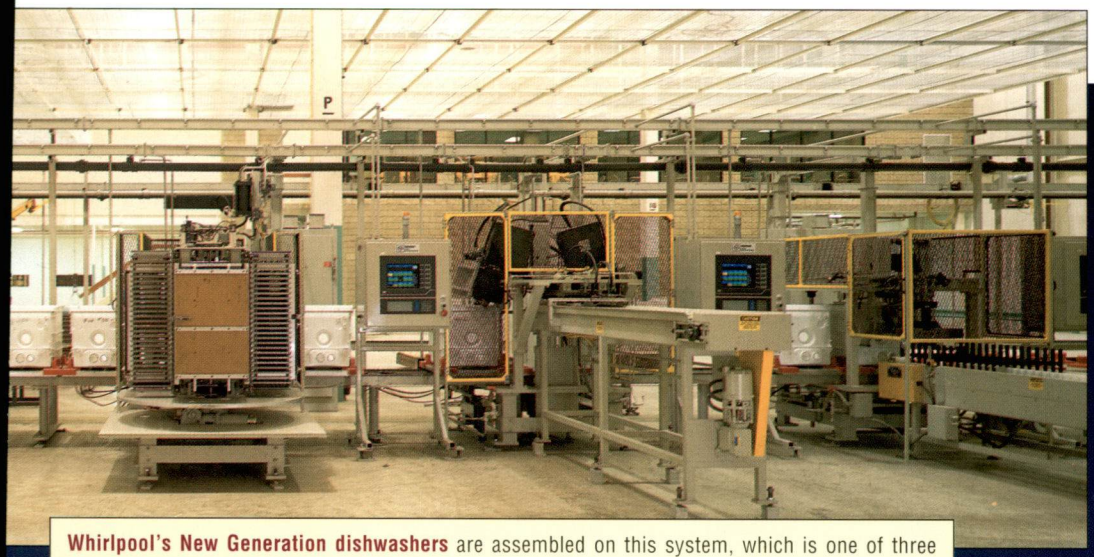
Wing spars for the new Boeing 777 aircraft will be assembled on a Giddings & Lewis system that integrates manufacturing, assembly and control skills from several of the company's operations. From the beginning, the customer has enjoyed the benefits of dealing with a single project management team.

ASSEMBLY SOLUTIONS.

Giddings & Lewis' global technology solutions include synchronous and non-synchronous assembly systems designed for a broad range of applications.

The successful start-up of our automotive body assembly line at the new Saturn plant — culminating more than three years of simultaneous engineering, system design and installation — is one example of our full-service automation capabilities.

On the other end of the spectrum, the Giddings & Lewis AutoFlex™ system provides an economical assembly solution. Based on a unique, modular transport concept, AutoFlex™ gives users the ability to add automation at a pace that matches their needs.



Whirlpool's New Generation dishwashers are assembled on this system, which is one of three Giddings & Lewis lines that assemble tubs, pumps, and doors. Giddings & Lewis played a key role in Whirlpool's extensive simultaneous engineering effort, which resulted in a product designed for manufacturability — and reduced the number of parts by 16 percent and labor by 33 percent.



Inflation canisters for automobile airbags are assembled and tested by Giddings & Lewis automated systems at the rate of one canister every 12 seconds. Each system employs bar coding, vision technology, and 40 tests or checks.

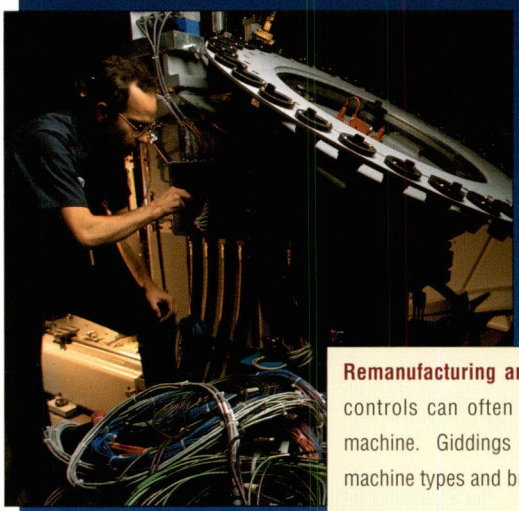


In addition to automotive applications, Giddings & Lewis assembly systems have been put to work in appliance manufacturing, aerospace, and several other industries. The addition of high-volume machining transfer lines to the Giddings & Lewis product list has expanded our ability to provide single-source machining and assembly systems.

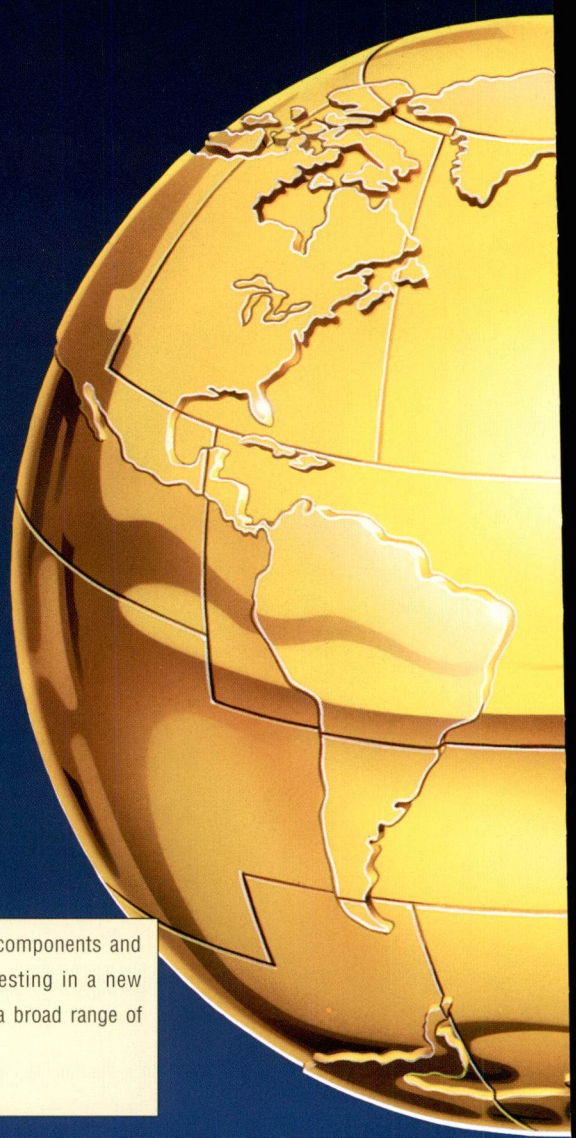
More than ever before, customers will gain the benefits of our unique breadth, flexibility, and total integration of resources.



Giddings & Lewis high-tech manufacturing solutions are helping to reduce costs, improve quality, and boost productivity in more than 50 countries around the world. Our manufacturing facilities are located in the United States, Canada, the United Kingdom, and Germany. Service and support operations are also based in these countries, and provide coverage to all of our worldwide installations. And our licensees operate in Japan, India, and China.



Remanufacturing an older machine with state-of-the-art components and controls can often be a cost-effective alternative to investing in a new machine. Giddings & Lewis can remanufacture or retrofit a broad range of machine types and brands.

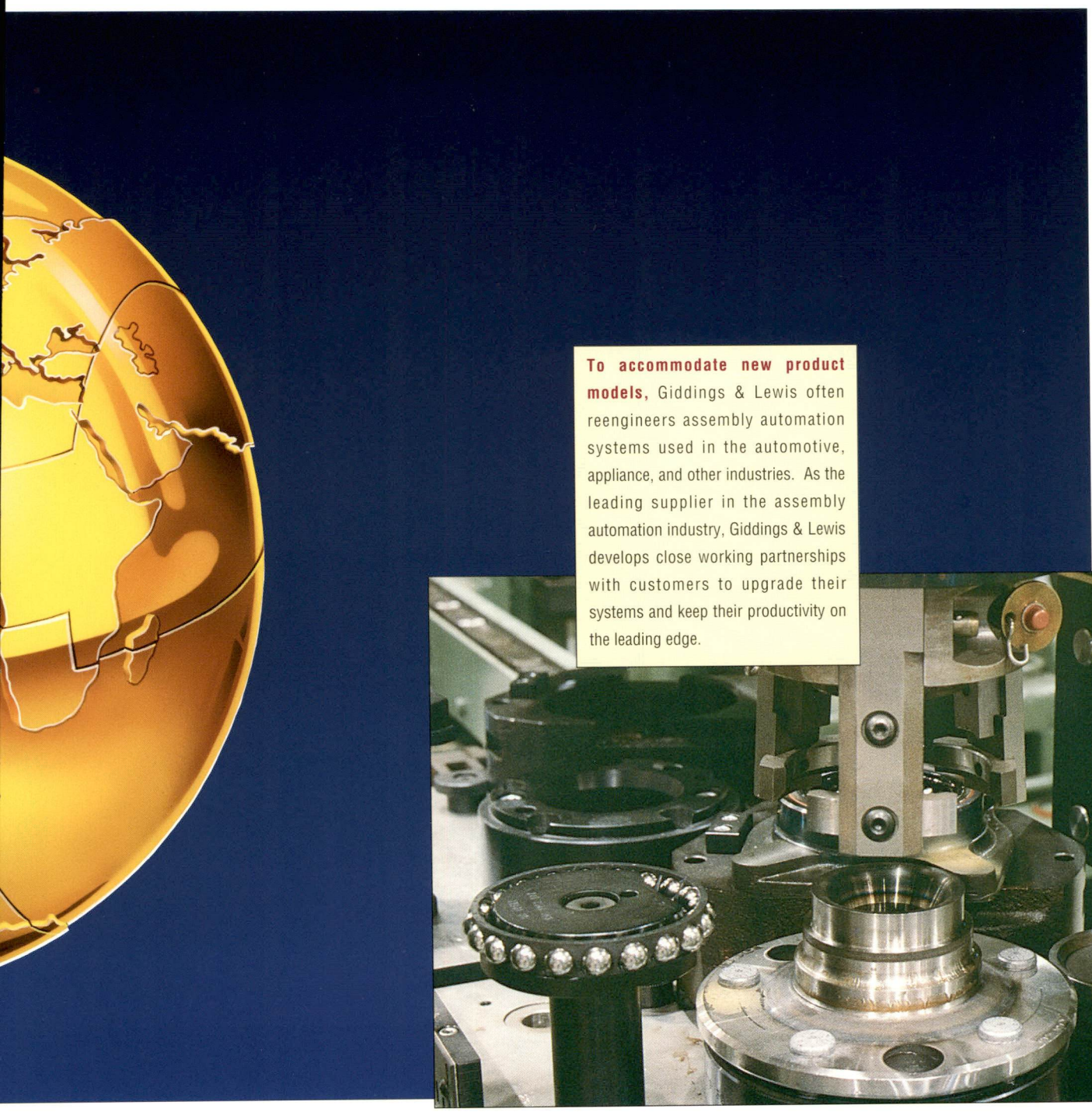


GLOBAL SERVICE. GLOBAL SUPPORT.

When Giddings & Lewis applications engineers attack a tough manufacturing challenge, they know they can count on an integrated support system to bring their solutions to life.

It starts with a vast pool of in-house engineering expertise — which brings to each project decades of experience in devising cost-effective manufacturing solutions custom-tailored to specific needs. Yet, the best solution doesn't always require wholly new systems or machinery. In fact, Giddings & Lewis often re-enginee old systems and remanufactures existing equipment upgrading technology to the state-of-the-art at substanti cost savings.

Whatever the manufacturer's needs may be, Giddin & Lewis stands ready to meet them — with flexibl fully integrated capabilities. We have our own foundr with an unbeatable track record in making the heav duty castings so essential to machine precision. Unlik

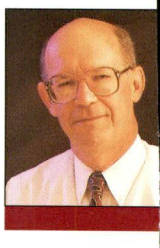


To accommodate new product models, Giddings & Lewis often reengineers assembly automation systems used in the automotive, appliance, and other industries. As the leading supplier in the assembly automation industry, Giddings & Lewis develops close working partnerships with customers to upgrade their systems and keep their productivity on the leading edge.

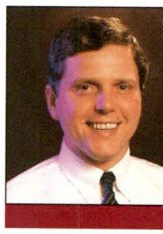
ers, we produce our own critical components. Our tware is developed by manufacturing experts. Our ling and fixture products are designed and built in-se, and sold to a wide variety of industries.

We pay attention to details, from systems design to al, on-site inspections. And we back every product we tall with the industry's best long-term service and port programs. If modification or service is needed, we respond promptly and efficiently — with 24-hour parts turnaround and an expert field service staff on-call.

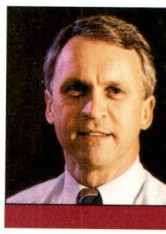
Giddings & Lewis has been in the manufacturing business for more than 130 years. As manufacturers around the world move into ever newer frontiers of production, Giddings & Lewis' fully integrated, global solutions will be ready to meet their needs.



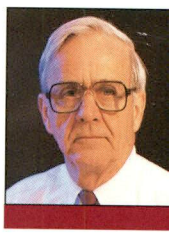
Robert W. Kynast
Group Vice President and General Manager Automation Measurement and Control Group



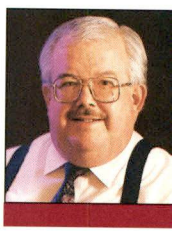
Paul E. Lugara
Group Vice President, European Operations



Stephen M. Peterson
Vice President, Worldwide Sales



Thomas L. Taylor
Group Vice President and General Manager Integrated Automation Group



Joseph E. Thompson
Group Vice President and General Manager Automation Technology Group

GIDDINGS & LEWIS, INC.

142 Doty Street, P.O. Box 590
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MANUFACTURERS START TO DO IT RIGHT



CEO Bill Fife has Giddings & Lewis machine tools operating in high gear.

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MANUFACTURING THE RIGHT WAY

Americans like to achieve breakthroughs, but they get bored producing what they create. Now some companies are giving the grunt work of business the respect it deserves. ■ *by Jeremy Main*

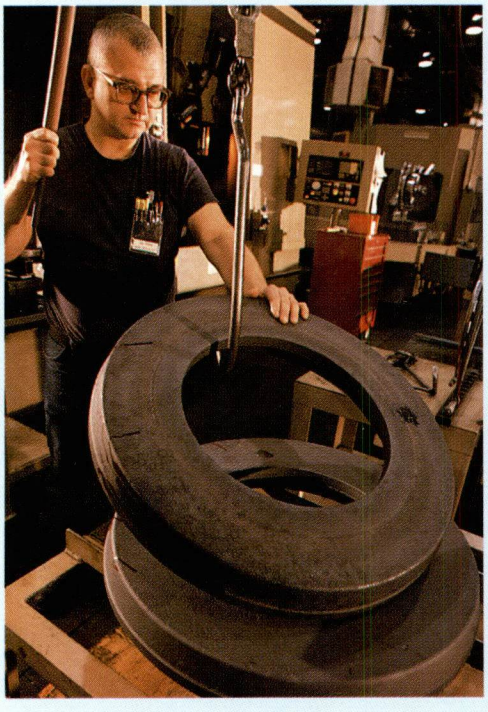
TOO MANY American companies regard the factory as just another cost center. Plants and the people who run them usually play supporting roles, seldom hearing loud applause from headquarters. But at a few right-thinking businesses, the factory is becoming the star.

Take, for example, Caterpillar, one of the ironclad names in U.S. industry. Earlier this year, Caterpillar—which is fighting it out with Komatsu of Japan in the earthmoving- and construction-equipment business—reorganized into 13 profit centers based in the plants. At first, says incoming chairman Donald Fites, 56, Caterpillar intended to move only its design engineers to the plants to work more closely with the production people. "Then you say, 'Hey, wait a minute, why just the manufacturing and engineering people?' " Fites continues. "Why wouldn't you want the whole team involved in a family of products working together?" So marketing and pricing folks will also be moving into the plants or, if there isn't enough room, to new adjacent offices.

Standing-room-only crowds at a factory? It seems hard to believe. But other companies would do well to follow Caterpillar's lead. Amid all the heroics performed by U.S. corporations to become more competitive in the last decade—improving quality, empowering workers, revolutionizing cultures—one ingredient was missing: They didn't pay enough attention to manufacturing, to the nuts and bolts of making things. U.S. industry remains the biggest and most productive machine in the world. But it needs a good overhaul. Throughout the 1980s, manufacturing productivity grew much faster in Japan than in the U.S. In the latest FORTUNE 500 CEO Poll, 64% of CEOs cite manufacturing as Japan's strongest competitive advantage (see page 75). Since Japan is spending more than the U.S. on capital investments, its advantage will likely continue.

Does grunt work still matter in this post-industrial age? Won't services and intellectual work take the place of machines? Well, the post-industrial age never really arrived.

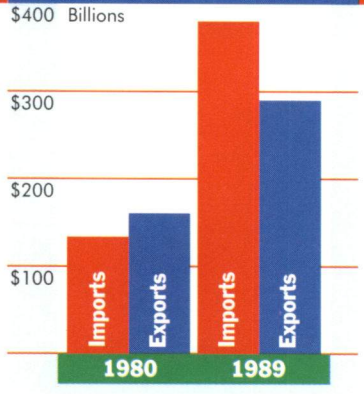
A rough gear forging arrives at a flexible manufacturing cell in Caterpillar's KK plant in East Peoria, Illinois, where automated tools mill, drill, deburr, and ream the







U.S. TRADE IN MANUFACTURING



Manufacturing held steady at about one-fifth of the gross national product during the 1980s (although the Commerce Department is about to revise its way of estimating manufacturing's share of GNP and may bring the percentage down a point or two for recent years). The one-fifth is vital. The world trades mostly in goods, not in services, and only the nation's factories can fix the U.S. trade deficit.

Travel to Fond du Lac, Wisconsin, to see how one company is doing its part. Giddings & Lewis not only bet early that its customers would have to revamp their factories or die, but also succeeded in a business that has been nearly consumed by foreign competition. Japanese, West German, and other foreign machine tool makers captured 49% of U.S. sales in the 1980s. Orders for American tools fell 22% in 1989, vs. a 33% *increase* for the Japanese. Giddings & Lewis outpaced the Japanese: Its sales rose 38% to $233 million. How so?

Well ahead of most of its customers, Giddings & Lewis decided that the future lay with selling flexible manufacturing cells—clusters of automated machines that perform many operations on many products. Traditional stand-alone machines do one thing at a time, and changing tools may take hours instead of seconds. After lagging for years, sales of flexible manufacturing equipment in the U.S. rose 10% last year to $113 million; Giddings & Lewis accounted for half the sales. "I was brought here to push total factory automation," says William Fife, 53, who became chairman and CEO last year. "I believe in total flexibility. A plant should be able to produce axles in the day shift and engine blocks during the night shift."

LARGE MANUFACTURERS are up against plenty of problems they can't do much about: schools that produce sub-literate workers, a budget deficit that makes borrowing expensive, a falling yen that lowers the price of Japanese exports. But Bill Fife and Don Fites have aimed their heavy machinery at one problem they can fix: the management of manufacturing. Academics, consultants, and executives agree that U.S. industry must focus on three key aspects of manufacturing: people, process, and design.

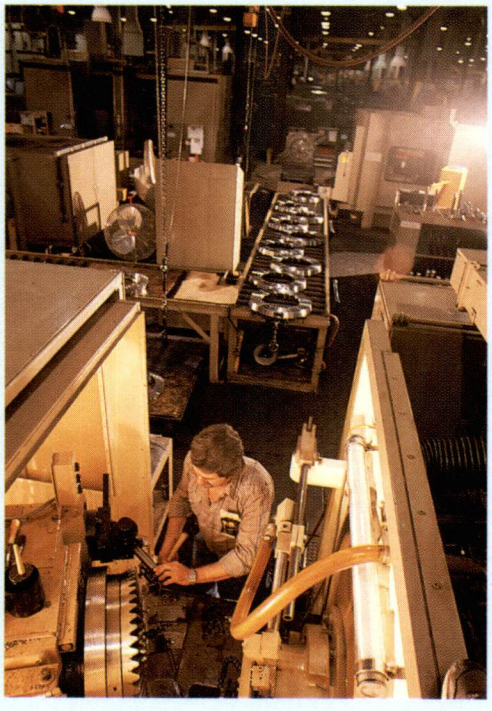
Somehow during the postwar years plants and the people who run them came to be regarded as second-class. A caste system grew up, separating engineering, where things are designed, from production, where things are made. Engineers kept their distance from operations people, and factories often became dead ends for people who weren't too bright.

Enlightened companies are making changes. Hewlett-Packard and Digital Equipment, two places where engineers reign, have begun to treat—and pay—their operations people better. At Johnson & Johnson, Stuart Christie, vice president for operations technology and development, says that the company is reviewing pay scales in operations and that manufacturing is now "a full and equal partner in our business." When a colleague in marketing recently chided Christie for taking his operations people to a conference in Lausanne, Switzerland, Christie shot back, "Don't you marketing guys go to Lausanne every year?" Point No. 1: Nurture your plant people.

Top managers must show more interest in the process of how things are made. Americans like to invent, to achieve breakthroughs, and they are very good at that. But they get bored with the details of how to produce what they have created. As a result, other countries often make things developed in the U.S. quicker and better. "The reason Honda is the best auto company in the world is that it spends an enormous

metal, then cut its teeth. The gear is moved a short distance between stations and sent on for heat treatment before it is assembled into a Caterpillar axle.

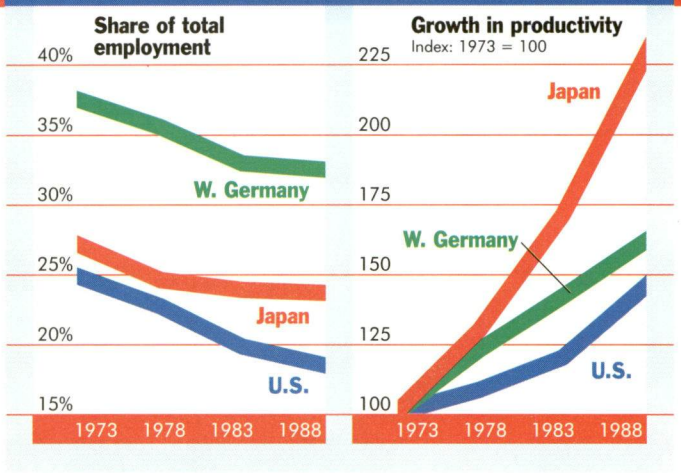






PHOTOGRAPHS BY MICHAEL L. ABRAMSON

MANUFACTURING JOBS & PRODUCTIVITY



amount of time understanding the manufacturing process," says Kent Bowen, co-director of the Leaders for Manufacturing program at MIT. Typically, he adds, a U.S. company puts two-thirds of its effort into developing a product and one-third into developing the manufacturing process. The Japanese and Germans reverse those ratios.

Companies that try to rev up their manufacturing sometimes make the mistake of seeking piecemeal fixes in automation or just-in-time inventory controls without first examining the whole process. In Caterpillar's old plants, bins of parts used to spend weeks awaiting their turn in the heat-treatment furnaces, which put a hard carbon finish on steel. Because milling, drilling, and final assembly took place in one building, and heat treatment in another, the parts had to move back and forth, wasting time and increasing the chances of loss and damage. There was no rational flow to the process; it just evolved. These days heat treatment takes place in the same building as all the other operations for a family of parts. Point No. 2: Pay attention to the entire manufacturing process.

Once upon a time U.S. companies were famous for their design, a talent that over the years degenerated into mere packaging. A well-designed product is not only handsome, but also easy to build, maintain, and use. The separation of engineering and production tends to make for faulty designs. Engineers will hand off a blueprint to the production people, who may find the idea too difficult and/or expensive to build. So they toss it back to the engineers for a redesign. Because of what MIT's Bowen calls the 15/80 rule—80% of the cost of a product is fixed during the first 15% of its development cycle—a clumsy start is hard to overcome.

The Japanese help ensure their fast getaways by simultaneously designing the product and the process to make it—a technique known as concurrent engineering. U.S. companies, particularly those in the computer business, are starting to do the same. DEC executive Robert Hannemann says his company decided to use concurrent engineering to design chips four years ago. The method has since spread to circuitboards, to electronic subsystems, and to entire central processing units. One result: The company makes a new product in half the time it used to require.

Above all, the best designs are simple. Automating without first simplifying can lead to a lot of disappointment with automation. Just ask General Motors, which invested billions of dollars in robots during the 1980s. IBM boasts that the LaserPrinter it introduced last fall has less than half as many parts as machines made by Ricoh and Hewlett-Packard (see box).

Giddings & Lewis revived its Masterline lathe, a standard metal-cutting tool used in many industries, by assembling a cross-functional team to reduce the lathe's weight and the number of parts. The team designed a tool that performs as well as the old one but costs $171,000, or 35%, less. This ability to make incremental improvements even to a mature product is critical. "In the long run," says Ralph Gomory, IBM's former senior vice president for science and technology, "being successful in this process, known as the manufacturing-development cycle, is as important as the ability to create wholly new products." Point No. 3: Design the product and the process simply and concurrently—and keep improving them.

Caterpillar's CEO-designate, Donald Fites, checks a customer's work site in Wilmington, Delaware.



E. J. CAMP

THE ERA OF mass production brought to its zenith by U.S. automakers after World War II has served the country well, but it is coming to an end. American companies are in danger of missing what might be called the second industrial revolution. The world is moving—and moving quickly—into the

REPORTER ASSOCIATE *Wilton Woods*

Japanese era of lean, flexible production. The two methods are fundamentally different (see table, page 60).

The U.S. system is buffered and inflexible. It depends on huge inventories and long lead times. It is good at making vast numbers of identical items in huge batches.

The Japanese system reacts quickly to a customer's request, pulling goods through the factory on demand. Inventories are minimized; in its ultimate form, it can produce batches of one at no extra cost.

Taiichi Ono, former executive vice president for production at Toyota, envisioned the lean system in the 1950s. His inspiration was the American supermarket. Ono saw that when customers took something from a shelf, they triggered a chain reaction: The store replaced the item from stock, then reordered from the wholesaler. In other words, the customers pulled the groceries through the system. Ono's idea was for everything to flow through the factory in response to the customer's demand. He described it in his 1978 book, *The Toyota Production System*, which has never been translated into English.

In many American factories, things still tend to wander around erratically rather than flow, getting lost here or delayed there, waiting for their batch number to be called. But Christie of Johnson & Johnson sees the day when "the product bar code on each package will tell the factory that the supermarket just sold a box of Band-Aids and to make another one. That way we can eliminate inventory all along the way and just make product to sell." J&J is testing such a linkup between a small retail chain and its Band-Aid factory in North Brunswick, New Jersey. The plant has already advanced to the point where an operator can give voice commands to machines, allowing him to make adjustments from anywhere in the production area without having to move to a control panel.

CATERPILLAR PROVIDES an interesting comparison of the American and Japanese systems. Unlike the U.S. auto companies, Caterpillar never lost its reputation for quality and service. But it did lose hundreds of millions of dollars in the early 1980s when construction fell into a recession. And naturally the Japanese appeared. With sales of $6 billion last year, vs. $11 billion at Caterpillar, Komatsu has engaged its American rival in a worldwide struggle to sell the equipment to build golf courses in Japan, mine ore in Brazil, and develop housing tracts in New York.

A CEO WHO KNOWS PLANTS INSIDE OUT

William J. Fife Jr. had a practical education. Fresh out of the Navy in 1958, he went to work as a sweeper in a grimy Inland Steel plant in East Chicago, cleaning up the scraps that fly out of machine tools when they cut metal. His "commando training," as he calls it, was critical to him later. "I understand how a sweeper feels at midnight," he says. "A lot of foremen don't know mills and people, but when I became a foreman I could tell at a glance how we were doing."

Today, as CEO of Giddings & Lewis, Fife sits in a corner office only a few steps from a plant where tools still throw off metal chips. No one would mistake him for an MBA-bedecked CEO who visits factories like a tourist. Fife is the human embodiment of the burly machine tools his company makes—more like the self-taught, up-from-the-floor industrial pioneers who put American manufacturing on top. Five feet eight inches tall, he weighs 240 pounds and has a bulldog jaw.

After sweeping up chips for a couple of years he won a spot as a "roller," the highest-paid hourly job at Inland. It was worth $100 a week in those days. A roller starts the process of turning coils of cold steel into auto bumpers or refrigerator panels. Being new, Fife got the worst shifts, like the one beginning at midnight Sunday. After eight years at Inland, he switched from steel to brass when Chase Brass & Copper, a division of Kennecott, offered him a job as foreman at a mill near Cleveland. It was there that he finally accumulated enough college credits to get a B.S. from John Carroll University.

Fife switched materials again in 1975; Combustion Engineering asked him to take over a troubled glass plant in New Jersey. He turned the plant around and in six years got to be president of Combustion's Invalco division in Tulsa. Invalco uses machine tools to make equipment for the oil industry, and Fife learned to appreciate the value of tools with plenty of "up time." Says he: "As long as I'm cutting chips, I'm making money. When I'm changing tools or pallets, I'm losing money."

It was not until 1985 that Fife began manufacturing machine tools. Cross & Trecker named him president of its tool-making subsidiary, Kearney & Trecker. The 1980s were a terrible decade for the machine tool industry, and Cross & Trecker was one of the severely wounded. But Fife found a winner in 1987 when he became president of Giddings & Lewis, then a subsidiary of AMCA International, a Canadian manufacturer. The company had stayed in the black, barely, through the bad years, and sales were just beginning to pick up in 1987. With the help of some new top managers, Fife sharply increased sales of flexible manufacturing systems.



LOUIS PSIHOYOS—MATRIX

Fife: His "commando training" paid off.

Though his background is in manufacturing, Fife knows sales and customers well. "The more feet I can get on the street," he says, "the more I can sell." Last July, AMCA sold off its subsidiary in a public offering, and Fife became CEO of an independent Giddings & Lewis. Unlike its competitors, it is debt-free and its shares have risen 25%—to about $17—since the offering. Fife, who is married and has a grown daughter, would be a happy man indeed if he could keep the stock price up—and bring his weight down. **-J.M.**

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TWO WAYS OF MAKING THINGS

The Lean/Flexible System (New Japanese style)	The Buffered/Rigid System (Traditional American style)
Can be profitable making small batches of products.	Profitable only when making large batches.
The product and the process for making it are designed concurrently.	The process is designed after the product has been designed.
The lean inventory turns over fast.	The fat inventory turns over slowly.
Suppliers are helped, informed, and kept close.	Suppliers are kept at arm's length.
Engineers search widely for ideas and technology.	Engineers are insular, don't welcome outside ideas.
Employees learn several skills, work well in teams.	Employees are compartmentalized.
The company stresses continuous small improvements.	The company looks for the big breakthroughs.
The customers' orders pull the products through the factory.	The system pushes products through to the customers.

In 1985, after three straight money-losing years, Caterpillar saw that cost cutting alone would not make it competitive.The company decided to redesign its factories at a cost of $1 billion, a figure that has since doubled. Caterpillar nicknamed the plan PWAF (pronounced pee-waf), for Plant-With-A-Future.

At a factory in East Peoria, across the Illinois River from corporate headquarters, the old and new systems operate literally side by side, the American one phasing out, the Japanese one phasing in. The KK plant (Caterpillar names its plants by letters) turns out 120 types of transmissions for the whole catalogue of Caterpillar machines. In the area where transmission cases are prepared for assembly, a long line of 35 machine tools, each requiring its own operator, stretches down one side of the aisle. On the other side are four (of an eventual 32) flexible cellular systems. Both do the same work of milling, drilling, boring, tapping, deburring, and reaming the crude steel from the foundry.

Because the old machines can handle only one kind of case at a time, the area around them is jammed with bins of cases waiting to go through in batches. When a batch is finished, the operator spends anywhere from four hours to two days setting up for the next batch. Once he is ready, he might need two or three tries to get the tool running right. With adjustments being made at 35 stations, a lot of $1,000 cases end up in the scrap heap before the next batch runs through smoothly.

On the other side of the aisle, the four cellular units are cutting metal. Since they are programmed to handle any case the plant makes, setup time is reduced to seconds; the system selects the right tools from a rotating belt and inserts them into spindles. And because the tool does the job right the first time, there is little scrap.

Standing within a few feet of the old jig mill he operated when he started working on transmission cases 21 years ago, Gary White runs two of the continuously operating cellular systems. He watches the tools' vital signs. On the old machines, White would know that a drill had become dull only when it broke or when it produced an off-size hole. The new one senses trouble by electronically monitoring the torque on the machine. Before the drill breaks or the hole goes off-size, the spindle stops and White replaces the worn part.

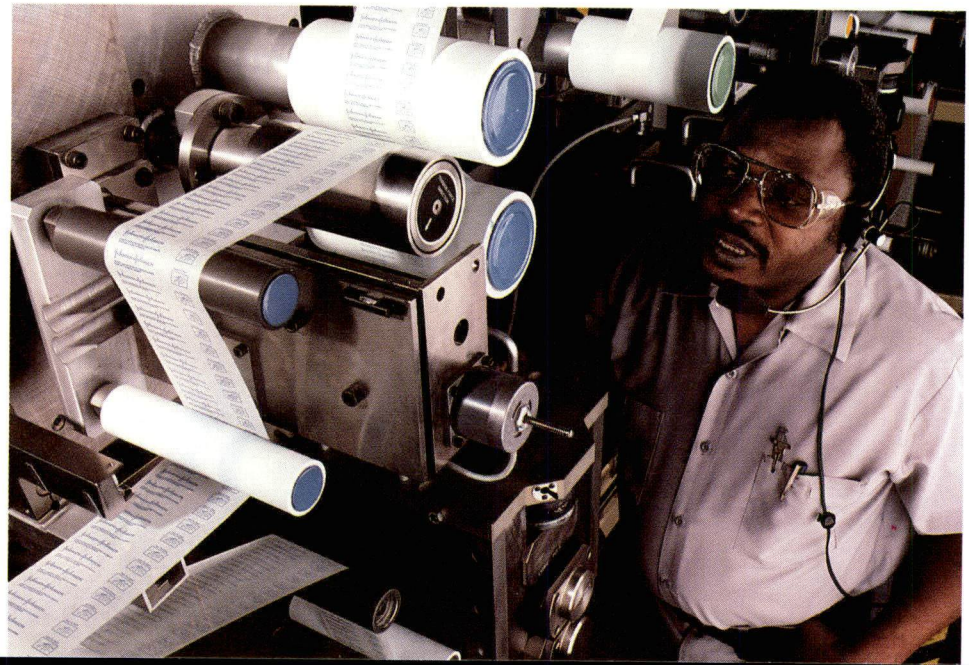
The other operations in the KK plant—gearmaking, heat treatment, assembly, final testing—are all being converted to the flexible system. Group president Pierre Guerindon, the 63-year-old Frenchman who created PWAF, says it now takes 15 days instead of three months to build a transmission.

Giddings & Lewis, one of Caterpillar's suppliers, has become as flexible as the systems it sells. Customers can buy a single free-standing tool ($171,000 or more), which can later be tied into a computer-integrated flexible system. Or they can buy a big CM 9000 computer system with16 machines (up to $30 million). Or they can buy anything in between. Says CEO Fife: "We start simple, but we can get complicated."

THE INDUSTRIAL BASE of the U.S. rests on companies much smaller—and a lot less sophisticated—than Giddings & Lewis. Firms with under 500 employees produce 50% of all U.S.-made goods and most of the parts supplied to big companies. Few of them have joined the second industrial revolution. A case in point: Only 11% of the machine tools in the U.S. are computer controlled. Says Leo Reddy, president of the National Coalition for Advanced Manufacturing: "The big companies are relying more and more on less and less efficient suppliers."

The small companies tend to be run by harassed entrepreneurs who don't have time to study the new manufacturing methods or

An operator issues voice commands to control this machine on a Johnson & Johnson Band-Aid line.



OVAK ARSLANIAN—GAMMA/LIAISON

capital to pay for new equipment. The rules of banking and accounting work against all machine tool buyers when they try to borrow. Up to half the cost of a modern machine may consist of software, which accounting rules say must be treated as an expense, not as an addition to fixed assets. If companies adopt just-in-time inventory controls, their inventories evaporate, reducing current assets. In either case, their collateral for borrowing is reduced.

THE PLIGHT of small manufacturers has finally begun to worry politicians and government officials. They see Japan pouring money into small companies, while the U.S. doles out meager handfuls. The Office of Technology Assessment, a research arm of Congress, recently made this comparison: Last year the Japanese government guaranteed 15 times more in bank loans to small companies than the Small Business Administration ($56 billion vs. $3.6 billion). In addition, the Japanese government itself advanced $27 billion in low-cost credits to small business. The U.S. doesn't make such loans.

C&J Industries of Meadville, Pennsylvania, is one small company that has overcome the handicaps to become a worldclass competitor. Founded in 1962 by Harold Corner, 55, and a partner, C&J makes components such as plastic fuse units for the automakers and other big businesses. It has all the flexibility, quality, and integrated controls of the best big companies.

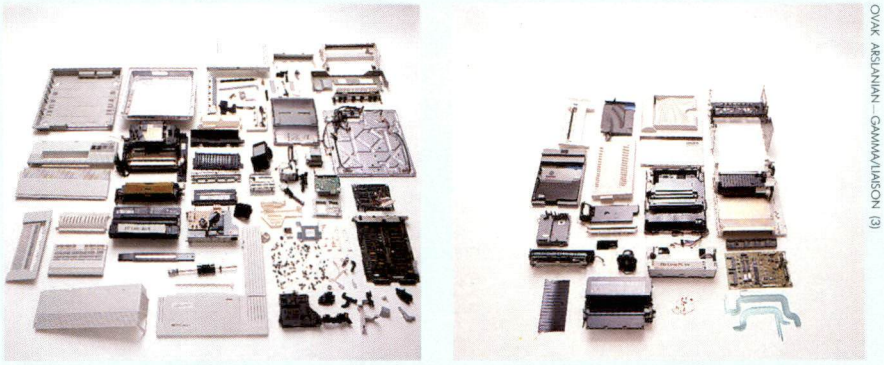
Corner's efforts to modernize C&J got a boost from Ford. Under its Q1 program to certify high-quality suppliers, Ford sent in experts to examine Corner's quality and show him how to improve. He also received assistance from a regional technology center, one of 14 planned in a program funded by industry and federal and state governments to give technical assistance to small businesses. For a fee, companies can learn to use the center's simple flexible manufacturing systems.

At C&J, computers enable Corner to design a new product in four days, down from 12 weeks. Sometimes he becomes irritated with the backwardness of big companies. C&J is equipped to receive specifications electronically by having them fed directly into its computer-aided design and manufacturing systems. But few customers will send plans by wire; one is NCR, which makes computers and other electronic equipment. Others still insist on using paper blueprints, so a C&J programmer must spend up to 40 hours entering the data. "We are fighting a tradition of using blue-line drawings," says Corner. "Even IBM doesn't force its engineers to send plans electronically."

Mark Gottfredson, co-chief of the manufacturing practice at Bain & Co., the Boston consulting firm, reports that most of the big companies he works with say they have just-in-time inventory controls, statistical quality controls, and many of the other practices justifiably in vogue today. But only 10% of the CEOs believe manufacturing should have the top priority in their business.

Executives like Corner, Fife, and Fites know how critical the factory is. They aim to link their computer-integrated plants with other functions—sales, accounting, inventory purchasing—to create a totally computer-integrated business. These new corporate captains see their companies becoming sinewy, fast, well-coordinated *athletes* of industry. In other words, global competitors. F

IBM DISCOVERS A SIMPLE PLEASURE



OVAK ARSLANIAN—GAMMA/LIAISON (3)

Hewlett-Packard's LaserJet III (left) has many more parts than IBM's LaserPrinter.

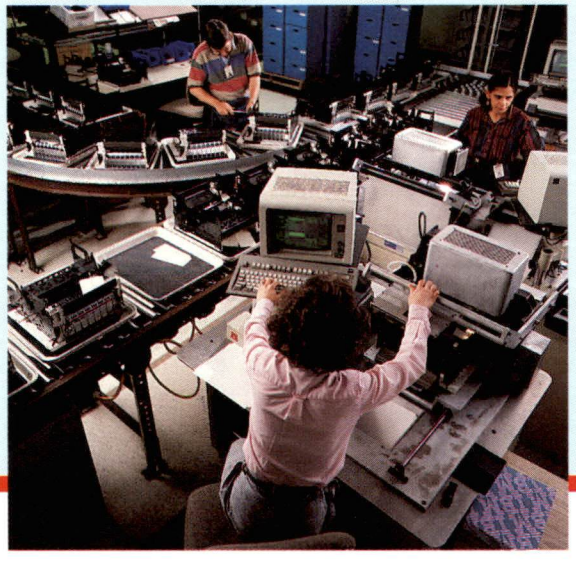
Manufacturers are just beginning to realize the enormous potential of simplifying design. The advantages are so obvious that hardly anyone noticed them until the Japanese began using simplicity as a competitive weapon.

As IBM advanced from one generation of printer to another, it formed teams of design and manufacturing engineers to reduce the number of parts. Using a computer-aided design and manufacturing system (CAD/CAM), the teams could quickly test their new concepts for printers. Their goal was to combine multiple parts into one and substitute snap-on fastenings for screws and bolts—without sacrificing quality or changing the look of the printer.

IBM's success is evident when the parts of its new LaserPrinter (above right) are laid out next to components from Hewlett-Packard's comparable LaserJet III. Not only does the IBM machine have fewer parts; the number of screws to hold them together has been reduced from dozens to a handful as well. So far, however, H-P's printers dominate the market.

IBM had expected to assemble its printers with robots. Instead, engineers found that simplicity yielded yet another extra dividend: It turned out to be cheaper and easier to make them by hand.

IBM workers can easily assemble the LaserPrinter by hand.

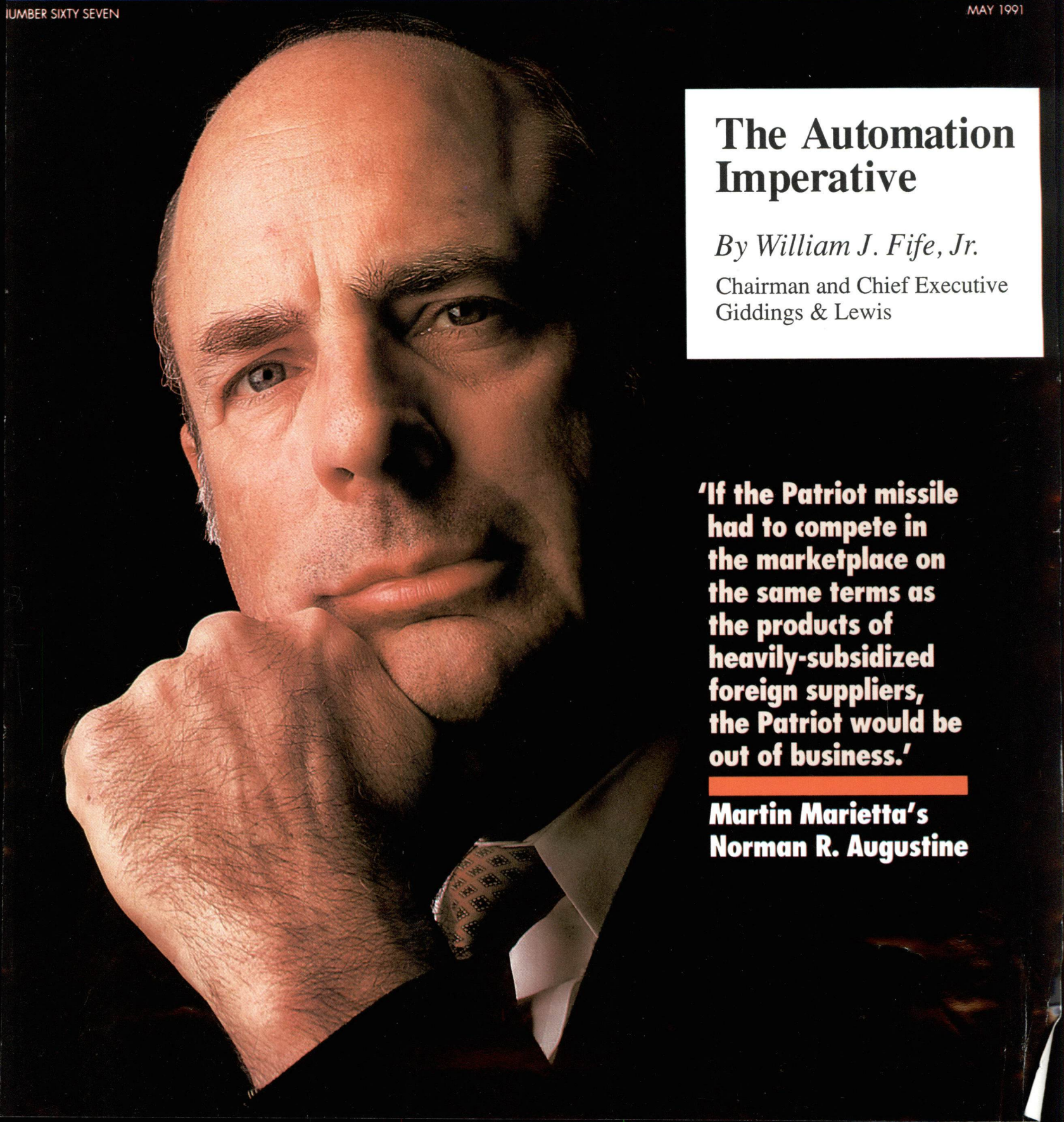


CE Roundtable: Factories Of The Future ■ The Automation Imperative

CHIEF EXECUTIVE

UMBER SIXTY SEVEN

MAY 1991



The Automation Imperative

By William J. Fife, Jr.

Chairman and Chief Executive
Giddings & Lewis

'If the Patriot missile had to compete in the marketplace on the same terms as the products of heavily-subsidized foreign suppliers, the Patriot would be out of business.'

Martin Marietta's Norman R. Augustine

BY WILLIAM J. FIFE
CHAIRMAN AND CHIEF EXECUTIVE
GIDDINGS & LEWIS

The Automation Imperative

What does the next manufacturing renaissance call for? Cost-conscious machines that operate at high tolerance, and totally integrated automated production.

The manufacturing world of the 1990s has taken on a far different character than the one most of us knew just a few short years ago. What once was the province of foremen and machine operators has become the focal point for many corporate long-term strategic concerns. No longer is the factory floor merely regarded as a cost center, but as an opportunity to gain a competitive edge in the global marketplace.

More and more managements are being converted to the doctrine that the renaissance of their manufacturing operations is the first step on the road to achieving leadership positions. For most, there is no longer any question about whether to automate—only when. Demographic trends at work in the world today certainly represent one factor contributing to the automation imperative. Because of lower birth rates in the 1960s and 1970s, the overall labor pool is shrinking. Roughly 75 percent of Americans who will be in the workforce in the year 2000 are already employed today. In 1995, we expect to [illegible] 50 percent fewer high school graduates than we did in 1971, according to one college dean who was quoted in *American Machinist* magazine recently. Over the decade of the 90s that translates to a shortfall of 20,000 to 25,000 engineers each year.

These demographic trends are not confined to the U.S. The president of Yamasaki Mazak, Teruyuki Yamasaki, stressed this same point recently in the *Japan Economic Journal*. "To survive international competition and solve the labor shortage," he said, "every plant has to introduce the flexible manufacturing system sooner or later." Similar views were expressed in the U.K. at a series of manufacturing roundtable discussions sponsored by our company. The shortage of skilled people was at the top of the list of concerns for the future of manufacturing operations. And along with the shrinkage in the skilled workforce, many of those who are newly available simply do not choose to enter industrial manufacturing work because of its perceived low social status.

Even if skilled manufacturing people were plentiful during the 1990s, companies in the industrialized nations will be at a severe disadvantage in world markets unless they adopt advanced automation technologies. The manufacturing methods of the 1960s and 1970s, and even the 1980s, are available everywhere in the world today. In Eastern Europe, in South America, and certainly in the developing "tigers" of Southeast Asia, there are large pools of semi-skilled labor available which can put the older methods and technology to work. So if manufacturing firms in advanced countries are going to compete globally, or even in their own backyards, their manufacturing methods must literally be on the cutting edge of technology. And that simply means more investment in productivity-improving automation equipment. A workforce trained in these technologies is needed too.



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systems. Many companies have adopted a step-by-step, modular approach, where systems are installed in phases. As operators involved in changing their manufacturing methods become more comfortable with the new technology, second and third phases of the planned systems can be brought on line.

A second factor contributing to successful implementation is the increasing cooperation between customers and suppliers. The sealed bid mentality that formerly governed many industrial purchases has given way to a realization that the best minds from both sides can be melded into a single team that has as its goal the successful start-up and continuing operation of the automated system. Concurrent engineering (or simultaneous engineering) teams become the rule rather than the exception for many purchases of automation projects, particularly in the automotive industry.

The third element that is contributing so much to success of automation investments is the onset of what we call "The New Age of Manufacturing Creativity." Usually, when we think about the word "creativity," we think of an interesting new television commercial, or something associated with advertising. But creativity is really about "coloring outside the lines"—about new ways of doing things. In many cases, the innovators are long-time employees who are excited to be able to approach old problems from new directions. In other situations, they are young people who do not understand the old argument that says, "We have never done it that way before," or "I do not think that will work." It is this change in attitudes—this fresh thinking—that is fueling the turnaround in manufacturing in companies all over the world, and particularly in this country.

For example, an aerospace company was looking for new ways to speed up the manufacturing of aluminum skin panels for large booster rockets. They wanted to be more competitive in serving their traditional customer—the U.S. Air Force. However, they also wanted to be in a better cost position so they could compete for private commercial aerospace projects. A cooperative, simultaneous engineering effort between their people and Giddings & Lewis resulted in an automated cellular system that has the capability to mill a complete rocket skin every 24 hours, compared to one or two per week with the previous method. The manufacturing people at the aerospace company could have continued to mill these large aluminum skins the same way they had always been done before—laid down flat in a horizontal position. But instead, the new system lifts them up into a vertical position so that large amounts of aluminum chips can be removed quickly. None of the equipment in this situation was new or revolutionary—it was the way it was applied that was innovative and creative and different.

AUTOMATION IS GLOBAL

We can, of course, continue to manufacture the same products the same way we have always done it. There may seem to be few risks in using proven techniques that we have come to trust over time. But that is a dangerous strategy in today's rapidly changing manufacturing world. The only strategy we can trust, in fact, is that if new automation techniques are available, a competitor may well be adopting them. U.S. manufacturing companies, in particular, have no other choice but to respond to the automation imperative. Most are playing a gigantic game of automation catch-up, left over from the difficult days of the mid-1980s. Our traditional reaction as a nation, when we get pushed into a corner, is to roll up our sleeves and get with it.

Today's renewed emphasis on manufacturing is being driven by the advent of a truly global economy, with all of the changes for business people that this implies. The global economy of the 1990s will be characterized by instant global communications. We have already seen the fax machine and teleconferences take over international business. It now takes only as long to get from New Delhi to New York, or from La Paz to Los Angeles as it takes a fax machine to transmit a quotation or receive an order. What new communications systems we will be using in the global economy by the end of this decade we can only guess at right now, but we can be sure they will have a major impact on business, literally knitting the world closer and closer.

As transportation and communications advances shrink the distances between markets and production sources, those who do not learn how to do business internationally may not be in much of a position to do business within their own borders. We will see successful companies operating with truly world-class sales and marketing organizations. As trade barriers continue to fall, as they inevitably will, we will all find ourselves with emerging market opportunities in places that many companies may not even think about today. And we must have the contacts and be able to provide the service required, so that we can build the relationships that lead to lasting customer-supplier partnerships and improved corporate revenues all over the world.

We must be able to deliver products and services from global manufacturing and distribution points that are dictated not by where we have always operated from in the past, but where we can find the available skills and resources to best serve our new business partners. This strategy may mean joint ventures or wholly owned facilities, or merely leased space in a dockside warehouse. In a similar fashion, many U.S. companies are exporting their components— including finished castings—to overseas customers for final assembly there. Whatever the final structure may be that makes sense for a particular company, it must be dictated by the ability to serve customers on a global basis. More and more companies are using global sourcing, where components and raw materials are obtained anywhere in the world where the right combination of quality, delivery, and pricing makes sense. Even such items as heavy castings, with fairly expensive shipping costs, are being sourced for American firms in such unlikely locations as Spain and Brazil.

In the dynamic environment of the 1990s, with its global sourcing, global sales and marketing, and global communications networks, those companies that are prepared to offer quality-based, value-oriented products and services will be the ones who stake out and hold world-class leadership positions. And if there is any key to building those leadership positions, it may well lie in taking advantage of the proven manufacturing automation opportunities that are now available everywhere in the world today. ■



William J. Fife, Jr. is chairman and CEO of Giddings & Lewis, a world class manufacturer of factory automation systems with headquarters in Fond du Lac, WI, and 2,200 employees worldwide.

"If new automation techniques are available, a competitor may well be adopting them."

COST-CONSCIOUS MACHINES

Cost savings and quality improvement are two of the primary benefits behind automation projects. For some companies, automating their metal-cutting operations may mean remanufacturing old machine tools to bring them in line with today's technology. For others, it may mean installing new stand-alone machine tools with pallet pools for setting up parts to be machined off-line, so that the only downtime for the machine tool occurs when parts are shuttled in and out. For still other companies, we may be looking at cellular systems or more complex flexible automation systems. Similarly, in assembly automation, some companies may be in a position to start slowly on a modular basis with automated conveyors, while others may be able to utilize a more complex, fully automated project where products are assembled in seconds.

While we may not yet be ready for much-publicized "lights-out" factories, most far-sighted companies are taking the automation steps that are appropriate for their own situations. Giddings & Lewis developed, for example, a two-machine cellular manufacturing system for automated machining of split case pumps. The former process machined the pumps as individual halves, which were then mated together in final assembly. Working as a concurrent engineering team, our people and the customer's people developed a joint process to machine the two halves as one part, using spacers to allow the tools to reach inside the casting for the internal machining operations. Because the design team was committed to flexibility, the product designers agreed to re-design the product slightly to allow for easier manufacturability. The result was a 15 to 1 improvement in productivity. Production was increased from one finished pump in three 8-hour shifts, to five finished pumps in one 8-hour shift.

Our work with Caterpillar involves a cellular manufacturing system for automated production of brake and axle housings. Their people and our people, working as a single team, designed a new process that greatly reduced the number of times parts had to be "fixtured" for machining operations. The team added in-process gauging and compensations to the process so the parts could be automatically measured and the tooling adjusted accordingly. And, very importantly, the process was fully simulated and completely maximized before the machine tools were built.

QUALITY IS TIGHTER TOLERANCE

Quality improvements can also be dramatic with new automation technology. Whenever human intervention can be reduced or eliminated, the chance for error is, of course, reduced accordingly. All of the critical surfaces on the Caterpillar parts are now machined in just one set-up, using a special back face bar, so the part does not have to be removed from its fixture, turned over, and re-positioned—all of which takes time and manpower, and can, of course, impact quality. Tolerances in the operating system are held to six-sigma standards, and the just-in-time inventory capability of the system permits machining through final assembly in only 24 hours, compared to two months with the previous methods. In another system for a pump manufacturer, scrap parts were reduced to zero after a two-machine cellular system was installed. The system consistently maintained very tight tolerances of plus-or-minus one thousandth of an inch on the pump bore alignments, providing the quality called for.

The new Saturn plant in Spring Hill, TN, has received a great deal of media attention recently. Working together, Giddings & Lewis and the Saturn people developed a new body-framing system that produces two models of the Saturn at a rate of 72 body frames per hour, and has the flexibility to be able to incorporate new models as needed, with only software changes, rather than a complete re-tooling. A total of 102 robots are used in the system. For a manufacturer of aircraft engine components, a two-machine cellular system was installed with advanced software and adaptive controls. Probing cycles are used to determine tool wear and part-processing quality, and the machines are programmed to react accordingly. Manual inspection is eliminated entirely, and the parts are repeatedly machined with accuracies of plus-or-minus two thousandths of an inch. It is important to point out that the advantages of reduced maintenance time, substantial flexibility, and almost instant changeover for new models were only possible because of the willingness of designers from both the customer and the supplier to start with a blank sheet.

A CHALLENGE BEYOND SURVIVAL

Several factors lie behind these successful automation projects. One is certainly a growing sense of confidence by both customers and suppliers in their ability to develop and successfully operate such



GIDDINGS & LEWIS, INC.
142 DOTY STREET, P.O. BOX 590, FOND DU LAC, WI 54936-0590
TEL. (414) 921-9400, EASYLINK 62956183, FAX (414) 929-4522