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Winter 2002 Issue

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Industrial Robots for Blow Molding Automation

(As presented at SPE Blow Molding Division's The Innovations In Blow Molding Technology Conference in October 2002)

by **Michael Mravyan, P.Eng., Ph.D., President**
MINATECH INC.

Blow-Molding Automation

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Introduction of industrial robots for the blow molded parts take-out is a well-known technology, particularly in automotive sector. The manufacturers of large industrial blow molded parts are still hesitant to introduce any automation in conjunction with the blow molding process. Majority of the blow molders, particularly in the accumulator head machine sector, heavily rely on manual labor for their secondary operations after the parts have been retrieved from the mold by a machine take-out and dropped, usually, on the table.

Minatech Inc. dedicated its efforts into development and re-introduction of automated take-out, de-flash and other secondary operations for the large industrial blow molded parts. There are three major roles that industrial robot can play in the process of blow molding automation: parts take-out, parts handling and presenting parts for the secondary operations. Most cost savings occur when all three roles are realized in the same application.

PARTS TAKE-OUT

Using an industrial robot to remove the parts from the mold is beneficial only when insert molding or labeling is required. Otherwise it might cause the cycle time increase, especially on the dual head machines. Fairly good results could be achieved by incorporating the industrial robot with the machine take-out for the further handling and downstream automation. Introduction of the robot for the parts take out will be the first step to a fully automated flexible manufacturing process. It answers the main concern the majority of blow molders express: how to automate when having the short runs. For the large parts, robots with the reach about 2 m is recommended. The main idea is to have as small a cantilever on the end arm tool as possible.

PARTS HANDLING

Industrial robot is the best way of handling the parts through the downstream process. It allows to combine precision positioning with the flexibility of the overall process in respect of having almost unlimited number of scenarios of the operation as well as the capability to bypass the stations or reject the parts at any given point of operation.

PRESENTING PARTS

Manual labor is widely used in the semi-automated environment to present the parts for the downstream equipment. In many cases it means double cost: first is initial cost of the downstream equipment and second is, growing every year the cost of labor. The possibilities to introduce a fully flexible manufacturing environment are practically unlimited and the list of possible operations shall be dictated by the needs of the finished product. At Minatech Inc. we successfully implemented into the automated lines the following operations: de-flash, trim, components assembly, piercing, punching and drilling, flame treatment, de-burring, labeling, component presence and leak testing.

INTEGRATION

Blow Molding machine integrated with an industrial robot, downstream equipment and conveyors allow manufacturers to create production flow of parts towards the packaging area and at the same time effectively handle the excess plastic like flash and trim bands to the re-grinder with minimum or no labor expenditure.

Some of the projects that we already accomplished can clearly demonstrate the realized labor cost savings possibilities with the return on the investment between 12 to 18 months.



Chairperson's Message

Welcome to the Winter 2002/03 Newsletter From Robert A. Slawska

"A Successful New Year 2003 to All"

The year 2002 was extremely successful for The SPE Blow Molding Division. We had an excellent conference in York, PA in October. This was attended by over 175 people. We also assisted in two (2) Norm Lee Workshops in Cincinnati, OH and Charlotte, NC. These also were well attended with the emphasis on learning more about the Blow Molding process.

We are looking forward to the NPE 2003 in Chicago - please mark the dates of June 23 through 28, 2003. This exhibition normally has over 75,000 attendees. This year should also introduce innovative and exciting new processing equipment. Over the past three years many new blow molding products have been developed. Come to the show prepared to discuss the future of the blow molding marketplace.

The next SPE Blow Molding Division Conference will be held in Detroit, October 14 & 15, 2003. This will be primarily for the automotive industry. However, many of these applications will also apply to the entire industrial/technical line of products. See more details within this newsletter.

Please join us in Nashville on May 4-8, 2003 for our Annual Technical Conference (ANTEC 2003). For information on this conference visit www.anteconline.com on the web. You can also get more details on Nashville at www.nashvillecvb.org. The Blow Molding Division will have seven papers presented at ANTEC 2003.

We hope you find this newsletter of benefit to you. Please give us your comments on what should be included in the newsletter. We have tried to be flexible on the articles and make them meaningful to you.

Sincerely,

Robert A. Slawska
Chairman, SPE Blow Molding Division

SPE Industrial & Large Part Blow Molding Workshop

Featuring: Problems & Solutions
Date: March 24 - 26, 2003

TO BE HELD AT:

Equistar Chemicals (11530 Northlawn Drive, Cincinnati, OH)
Milacron Facilities (4165 Halfacre Road, Batavia, OH)

Workshop Leader: Norman Lee

At this workshop you will examine how to: Lower costs & increase efficiency with design mold engineering, material selection and machine utilization. Features iHands On! practical know how from concept to production.

Information on Workshop Contact by phone: Call SPE at 203-740-5403 or online: go to <http://www.spe.org/conferences/seminar.htm>, then go to upcoming seminars, then go to the title of program of interest.

Blow Molding Calendar of Events

2003

March 24-26: Industrial Blow Molding Workshop, Cincinnati, OH, Norman Lee Workshop Leader - please see below for further information.

May 4-8: ANTEC - Annual SPE Meeting & Conference, Nashville Convention Center & Stouffer Renaissance Hotel, Nashville, TN. John Meckley - Chairperson, Technical sessions, Blow Molding Division Board of Directors Meeting, No Business meeting, Best Paper, Scholarship & student design awards presented.

June 23 -27: NPE 2003 - National Plastics Exhibition, McCormick Center, Chicago, IL

August 25 - 27: High Performance Blow Molding Seminar, York, PA, Norman Lee, Workshop Leader & Graham Engineering will host - more info to follow.

October 14th & 15th: SPE Blow Molding Division Annual Technical Program Conference (Automotive & After-market focus) - Michigan State University, Troy, MI. Bob Jackson - Chairperson, Robert Dirrado is Co-Chair, Sharon St. Louis - Local Coordinator. Technical Session, Formal business meeting & BOD Mtg., Lifetime Achievement awards presented.

Many Thanks to Bob Gilbert



Thank you - Bob Gilbert for all you have done the last numerous years with SPE in many phases and activities. Most recently, three terms (9 years) as the Blow Molding Division Representative to SPE International. You truly served us beyond the Call of Duty. Unfortunately, the by laws of SPE will not let you serve again for at least one more year and then you can go for nine more years. During Mr. Gilbert's term as Councilor, he served as Chairman of the Finance Committee and the Chairman of the Technical Committee. This position also required Bob to attend 4 or 5 meetings per year, which he did without missing any. In previous years, Bob Gilbert served as Chairman of the Division as well as all of the other officer positions.

Bob Gilbert presently is our Nominations Chairperson for election of Directors and Officers of the Blow Molding Division of SPE. This requires direct contact with the general membership of our Division. Last year Bob received the Outstanding Board Member for 2001.

We look to more years of dedicated service from you as a faithful member of SPE International and the Blow Molding Division.

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OR

Any of the Board of Directors
listed on the back of
the Newsletter

Large Part
Blow Molding
Workshop
March 24 - 26, 2003
at Equistar Chemicals,
Cincinnati, OH
&
Milacron Facilities,
Batavia, OH
Workshop Leader:
Norman Lee

(see further details in this newsletter)

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PASSING OF THE PEN

By Robert A. Slawska
Newsletter Editor

Twelve years ago, I volunteered to assist in the publication of the SPE Blow Molding Newsletter. This newsletter is published three times a year. About one month into this program, the Editor resigned from his position due to Company needs. This left me by default as the Newsletter Editor. I knew nothing about this and the one thing I realized was I needed someone to help me and do most of the work (Isn't this the American Way). Since Emma Griffith was an executive assistant to me, she volunteered for the job.

This is one of the best things I decided to do. It only took a short time to realize for Emma and I that we actually enjoyed the producing of the newsletter. We met and talked to many people along the way. We were able to take pictures of things and people then place them into the newsletter three times a year. We finally came up with a formula on how to do the newsletter and what to put into it. This became straight forward for us but it was the missing spaces which created a challenge each and every issue to fill.

I have finally decided to remove myself from this Newsletter Editor job after the Spring 2003 issue. I will miss putting this together. However, I will help where ever I can to keep the newsletter going and news worthy to the Blow Molding Membership. Emma Griffith has agreed to stay on and help in the publications of this newsletter as she has done for the last twelve years. Thank you Emma Griffith for the dedication and tremendous help with putting this publication together.

I wish to also thank the various Board of Directors over the last several years and you, the membership, for not throwing any fresh eggs at me over the 12 years.

I would now like to introduce Mr. Tim Noggle who will take over as the new Newsletter Editor. Tim will do a great job in producing the newsletter with the assistance of Emma Griffith. I also work close with Tim at our real job (He's my Boss at Graham) and will try to keep an eye on him to get this out on a timely basis. Here is Tim's background. *(continued in next column)*

WINNER OF STUDENT DESIGN COMPETITION



Colin Anderson

Colin Anderson graduated from Western Washington University (Bellingham Washington) in June 2002 with a degree in Manufacturing Engineering Technology with a specialization in Plastics. He is currently employed as a production engineer by Northwest Composites in Marysville WA. He enjoys radio-controlled airplanes, fishing, woodworking, and snowboarding.

Colin Anderson won this competition with his design project which is a Blow Molded Flashlight. Congratulations, Colin.



Timothy Noggle

Tim has been in the plastics industry since 1995 in various positions in the engineering and sales fields. This experience in the plastics industry is in Extrusion Blowmolding, Injection and Gas-Assist Injection Molding, Extrusion, Compounding and Recycling. He has held the following positions:

- Current Position is Business Director and Product Line Manager for Industrial Machinery at Graham Machinery Group in York, PA
- Maintenance Manager, Senior Program Engineer and Engineering Manager with Lear Corporation in Fremont, Ohio.
- Engineering Manager with Infiltrator Systems in Winchester, KY
- Maintenance Manager with Guardian Automotive Systems in Upper Sandusky, Ohio (Automotive glass lamination and forming)


Also spent 6 years on active duty in the US Army Ordnance Corps.

Holds a Bachelor of Arts in Biology from Bloomsburg University of PA and an MBA in Management from Tiffin University in Tiffin, Ohio

Married to wife Paula and resides in Dover, PA.

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THANK YOU - Graham Machinery Group

We wish to recognize and thank Graham Machinery Group for their generous contribution to our Work Place Scholarship awards. Thank you Mr. Steve Wood and Mr. Joe Spohr of Graham, who agreed to the awarding of this scholarship for the next 15 years.

This award is presented to Blow Molding Division member companies to assist their employees to attend continuing education functions in blow molding and improve their job related skills.

Up to \$500 per person is available to attend an SPE Blow Molding Conference, an SPE Seminar in Blow Molding, or other program applicable to blow molding.

ARE YOU ELIGIBLE? This is what you need to apply:

1. The employee must be a full-time employee of one of our member companies (having at least one current member of the SPE Blow Molding Division).
2. The employee's job function must be blow molding related.
3. The employee's academic training must not be higher than Associate Degree.
4. The employee must have company recommendation and support.
5. Costs exceeding \$500 will be responsibility of the employee or employer.

HOW TO ENROLL


1. Submit a request to the Blow Molding Division (address available on form, from SPE on website - www.4spe.org or from Blow Mold Division).
2. Include a letter of support from your company.
3. You will be notified of acceptance before the event that you wish to attend.

We have named this award "The Graham Machinery Group Workplace Scholarship Program".

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Board of Director's Meeting

Minutes of the Board of Directors of the Blow Molding Division of SPE, Meeting held at Heritage Hills Conference Center, York, PA, October 1, 2002.

- ❑ **Executive Meeting: Present - Bob Slawska, Bruce Thompson, Mark Heitker, Ron Puvak, Jon Meckley, Charlie Keener (excused). Invited - Bob Delong & Bob Jackson; meeting Called to Order at 10:50AM**
 - Discussed why ABC 2002 looks so successful, analyze it and use it as blueprint for future.
 - ABC 2003, Detroit: Need dates pinned down, October 14 & 15, Committee members added; Bruce Thompson, Sharon St. Louis will be paid local coordinator.
 - Web Site discussion, next steps and discussion on needs. Consider adding a position to coordinate the activity.
 - Discussion on the conference splits with National.

ACTION ITEMS:

1. *Executive committee drafted a policy for the times when board will have a teleconference instead of a face to face. Basic concept is: Executive committee quorum must meet, BOD members will be asked to attend, those that cannot will be allowed to teleconference. Face to face meetings are preferred.*
 2. *E-mail concerns of conference support to Bob Slawska. Bob and Bruce will assemble points and pass along to SPE National.*
 3. *BOD meeting in Detroit at APC in late January. Bob Jackson to handle local arrangements. View ABC 2003 location.*
- ❑ **Secretary's Report by Ron Puvak**
 - No changes or corrections.
 - Motion to approve made by Bob Jackson, Seconded by Gordon Williams and Approved by majority.
 - ❑ **Treasurer's Report by Mark Heitker**
 - Report distributed.
 - Fall Treasurers report distributed.
 - Annual report has been filed.
 - Motion to approve made by Bruce Thompson, Seconded by Bob Jackson, and Approved by majority.
 - ❑ **Finance Report by Bob Delong**
 - Disbursement account will experience shortfall of \$7,000 due to lower revenues.
 - We are looking at CDs as possible better investment.
 - ❑ **Nominating Committee Report by Bob Gilbert**
 - No report
 - Dave Holliman needs help to complete Honored service and Fellows awards.
 - ❑ **Awards Report by Dave Holliman**
 - Report distributed
 - Lifetime achievement reward - Bob Slawska
 - No Honored Service submitted for 2003
 - Sam Belcher nominated for Plastics Hall of Fame.
 - Dave asking for a volunteer to help. John Rathmann will help Dave.
 - ❑ **Membership Report by Lew Ferguson**
 - Total Membership 917; 569 primary; last December 1017
 - ❑ **Publicity / Web Site Report by Bob Jackson**
 - Ron Puvak will begin to coordinate the Web site.
 - Web site has \$500 of original funds to spend and an additional \$2,000 to allocate by end of 2002.
 - ❑ **Councilor's Report by Charlie Keener**
 - Report distributed. Budgeted discussed.
 - ❑ **Newsletter Report by Bob Slawska**
 - Sponsorship revenue is at \$12,900. Will add some partial ads for remaining issues.
 - Bob and Emma will no longer coordinate Newsletter after May 2003.

ACTION ITEMS:

1. *Need replacement or new method to produce, edit and mail newsletter.*

Continued on Page 10

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ON THE LIGHTER SIDE.....

Engineering In Hell

An engineer dies and reports to the pearly gates. St. Peter checks his dossier and says, "Ah, you're an engineer - you're in the wrong place." So, the engineer reports to the gates of hell and is let in. Pretty soon, the engineer gets dissatisfied with the level of comfort in hell, and starts designing and building improvements. After awhile, they've got air conditioning and flush toilets and escalators, and the engineer is a pretty popular guy.

One day, God calls Satan up on the telephone and says, "So, how's it going down there in hell?"

Satan replies, "Hey, things are going great. We've got air conditioning and flush toilets and escalators, and there's no telling what this engineer is going to come up with next.

God replies, "What???? You've got an engineer? That's a mistake - he should never have gotten down there; send him up here.

Satan says, "No way. I like having an engineer on the staff, and I'm keeping him."

God says, "Send him back up here or I'll sue."

Satan laughs uproariously and answers, "Yeah, right. And just where are YOU going to get a lawyer?"

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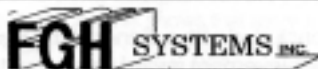
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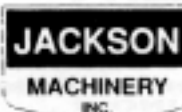
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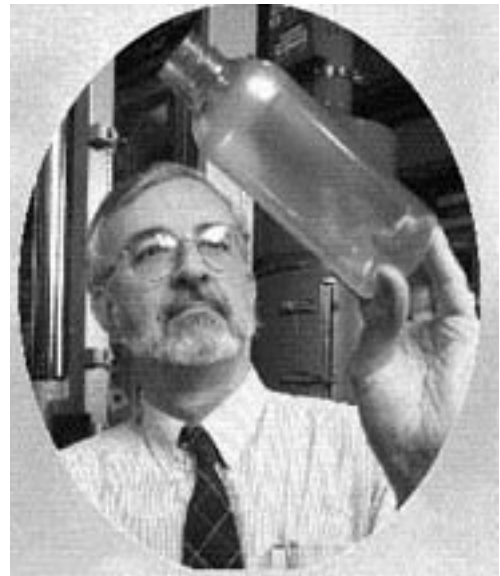
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Honoring Dr. Andres Garcia-Rejon



Every year at the SPE ANTEC conference, the Blow Molding Division selects the best paper award. At our last Board of Directors meeting we have decided to name this award.

The SPE Blow Molding Division is honored to announce that from this current ANTEC 2003 on, the award will be presented in the name of Dr. Andres A. Garcia-Rejon. Dr. Garcia-Rejon was a Fellow member of SPE and a member of our Blow Molding Division. He was also an associate and friend to many of us. Andres had presented over 100 technical papers at ANTECS and other conferences such as our High Performance session. It is most fitting to now name this best paper award the "Dr. Andres A. Garcia-Rejon Best Paper Award".

Above and beyond his many exploits as a respected scientist, Andres is missed by the people who knew him for his warmth, his friendship and his deep humanity.

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MEMORIAL TO CARRIE FOX SOLIN

***A tribute to our
Scholarship Namesake
as reprinted from our December 1990 Newsletter:***

The Board of the Blow Molding Division was shocked to learn in February of the death of Carrie F. Solin, one of our most beloved Directors. She brought a wonderful presence to our gatherings and will truly be missed.

Carrie joined Rohm and Haas in 1980 after receiving her B.S. degree in Computer Science from Brown University and her MBA in Multinational Finance from Wharton School.

Carrie's first four years with Rohm and Haas were spent in various financial positions. After working in the Controllers' and Treasurers' offices, Carrie became the first Plant Financial Analyst at Rohm and Haas. She then went on to become the Financial Manager of the Plastics Business Group.

Mrs. Solin joined the Plastics Additives Business Team in 1984 as a marketing specialist in new market development. She was most recently Marketing Manager for Plastics Additives. Her group developed and managed the teams growing businesses at Rohm and Haas, with a major presence in all four geographic regions. Additives for plastic bottle compounds are a key component of the business.

Carrie was the Founder and Chairman of the Packaging Council of the SPI's Vinyl Institute, an industry group that promotes vinyl packaging. She was elected to the Society of Plastics Engineers Blow Molding Board in 1987. At the 1986-1989 ANTECS, Carrie presented/co-authored two technical papers on vinyl bottles, as well as moderated two sessions. As a small emblem of our remembrance of her, the first Blow Molding Division scholarship award will be given in her name.



Dr. Lawrence Solin

Dr. Solin, Carrie's husband has traveled to ANTEC every year to present the "Carrie Fox Solin Scholarship" to an outstanding student in a Plastics University. This has been since the inception of this award was started in 1990.

We thank you again Dr. Solin. As you know this is a very worthy award for a college student in many cases in need of financial support to complete an education. Dr. Solin has been Recognized by the SPE Blow Molding Division with an award as "Honorary Membership in the SPE Blow Molding Division."

An Email Update from:

***Trevor Beyeler,
The 2002 Carrie Fox Solin
Scholarship Recipient***

sent to:

***Mark Barger,
The Education Committee
Chairperson:***



Trevor Beyeler with his wife

Hello Mark! Just thought I'd write a quick note. Things here at Pittsburg State are going great. This semester has been a good one so far, and very busy. I'm taking 21 hours, so it's a full load. My wife had our baby last December. It was a boy, 7lbs, and 19 1/2 inches long. He's about 2 months now. We named him Reed Alan Beyeler. Things have been fun for the last 2 months!

I also wanted to thank you and the Blow Molding division once more for the scholarship and letting me attend the conference. It's been such help these last two semesters. The conference was excellent as well-such a good group of professionals. If you have a chance, pass along my thanks to the others involved with making it all happen.

Well, take care and best wishes!
Trevor Beyeler

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Board of Director's Meeting *continued from Page 6*

☐ TPC – Jon Meckley

- Report distributed.

TPC – SUB-COMMITTEES/ACTIVITIES

☐ ABC 2002, York PA – Joe Altamari

- Complete; over 170 attendees. Expect from \$10,000 to \$18,000 as net profit.

☐ ANTEC 2003 Report – John Meckley

- Three abstracts submitted.
- Speakers and Moderators will meet at 6:30 AM
- Session will begin each day at 8:00 AM

☐ ABC 2003, Detroit MI – Bob Jackson

- Dates set as October 14th and 15th.
- Additional committee members are Bruce Thompson, Mark Barger, Lew Ferguson, Scott Covey

ACTION ITEMS:

1. Bob will prepare detailed report and cost spreadsheet which will be forwarded to BOD members.
2. Ron will update spreadsheet and send to committee.

☐ Education - Mark Barger

- Annual letter about scholarships sent to the appropriate schools.
- Western Washington University has a program that meets our criteria.
- Alcan/Wheaton first workplace scholarship. Approved 2 scholarships.
- Recommendation to approve up to 3 \$500 workplace scholarships for next year.

Motion: To reduce the scholarship disbursement from \$2,500 to \$2,000 per year beginning in next fiscal year. This will be reviewed every year. Made by Mark Barger, Bruce Thompson - Seconded, approved by majority.

Motion: To reduce the student design award to \$1000 with \$500 travel allowance. Made by Gary Hennebery, Mark Heitker - Seconded, approved by majority.

☐ Marketing - Warren Bentkover

- Discussion on marketing flyer on reason to join BM division
- Look at promotions at NPE in conjunction with SPE National. SPE National to have a program for NPE
- Letter to top blow molding companies status. Bob Slawska will wait until November.

ACTION ITEMS:

1. Continue to complete draft brochure as soon as possible. Draft to be sent.

OLD BUSINESS:

None

NEW BUSINESS:

- Open board positions to be filled.
 - Motion made by Dave Holliman that John Rathmann nominated to fill open 2004 position, seconded by Gordon Williams, Approved by majority.
 - Other names proposed to fill other positions. Bob Jackson offered Mike Farley, Encompass, as potential. Joe Altamari and Mark Heitker also have additional names. Formal documents will be prepared and submitted to complete the process.
- Discussion on how to make the board more effective; Options discussed include, reducing the number of committees, reassignment of duties, etc. One suggestion is to combine Publicity, Web Site, Newsletter under Marketing. Other committee realignment was also discussed. Bruce Thompson and Bob Slawska will review suggestions and submit recommendations.
- Winter Meeting in Detroit, at APC offices on January 29th.

ADJOURNMENT:

5:59pm: Motion to adjourn made by Bob Jackson, Seconded by Bruce Thompson, Motion approved by majority.

Blow Molding Division of SPE presents:

The Annual Blow Molding Conference

October 14th & 15th, 2003

Held at:

The Management Education Center, Troy Michigan

Conference/Registration Coordinator

Sharon St. Louis
519-735-8805

sslouis-spe@cogeco.ca

Conference Chair

Robert R. Jackson
262-284-1066

bob@jackson-machinery.com

Visit our website : www.blowmoldingdivision.org -
click on conference for information - to register - to pay

SPE BLOW MOLDING DIVISION NEW MEMBERS



August 2002 - January 2003

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Brent Evans
Michael T. Fien
Theodore Guss
Craig Hasselberger
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72	George Pickering	Robert Noonan	Robert Slawska	William Waterloo	N/A	
73	Robert Noonan	Robert Slawska	William Waterloo	Richard Denny	Russell Schoeller	
74	Robert Slawska	William Waterloo	Richard Denny	Peter Helsebusch	Denes Hunkar	
75	William Waterloo	Richard Denny	Peter Helsebusch	Maurice Latreille	Denes Hunkar	
76	Richard Denny	Maurice Latreille	Robert Drury	John McNamara	Denes Hunkar	
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78	Robert Drury	John McNamara	Monroe Mitchell	James Coldren	Maurice Latreille	
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80	Monroe Mitchell	Roland Wendricks	Roland Wendricks	Richard Joyner	Maurice Latreille	
81	Roland Wendricks	Robert Gilbert	Richard Joyner	John Cahill	Robert Drury	
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83	Robert Gilbert	Phillips Schram	Frank Kennedy	John Cannaday	Monroe Mitchell	
84	Phillips Schram	Samuel Belcher	John McGarry	John Cannaday	Monroe Mitchell	
85	Phillips Schram	Samuel Belcher	John McGarry	John Cannaday	Monroe Mitchell	
86	Samuel Belcher	John Cannaday	Henry Nyman	John McGarry	Monroe Mitchell	
87	Samuel Belcher	James Moran	Robert Jackson	John McGarry	Robert Gilbert	
88	James Moran	John McGarry	Gary Henneberry	Robert Jackson	Robert Gilbert	
89	James Moran	John McGarry	Gary Henneberry	Robert Jackson	Robert Gilbert	
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91	John McGarry	Delbert Yarbrough	Terri Bryan	Gary Henneberry	Robert Gilbert	Sam Belcher
92	Delbert Yarbrough	Gary Henneberry	Paul Geddes	Terri Bryan	Robert Gilbert	Lew Ferguson
93	Delbert Yarbrough	Gary Henneberry	Paul Geddes	James Parr	Monroe Mitchell	Lew Ferguson
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