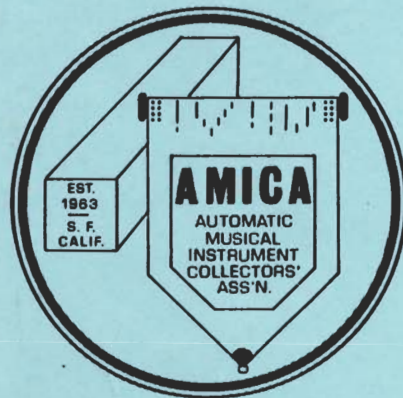


Technicalities

VOLUME II



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AUTOMATIC MUSICAL INSTRUMENT COLLECTORS' ASS'N.

Volume II of AMICA TECHNICALITIES is divided into four sections: section one, pump players, materials, techniques, tools etc.; section two, the Ampico; section three, the Duo-Art; and section four, other reproducers, organs, phonographs, and photoplayers. In compiling this manual, an attempt was made to keep articles on the same or similar subjects together so that various views and ideas could be easily compared. In some cases, it was necessary to remove a technical article from a larger work which included other non-technical subjects. In these cases the literary style was spoiled and my apologies to the authors who were subject to this editing.

My thanks to Ginny Billings for handling the checking, printing and assembly, and a very special thanks to all those who took the time to write for the AMICA Bulletin and share their knowledge with other members.

Mel Luchetti
Chairman, Technical Comm.

CONTENTS

SECTION I: SELECT YOUR PLAYER PIANO

A Revolution in Rebuilding Automatic Instruments (Robert L. Baker)-----	1
Re-Examining the Use of Polyurethane Films in Rebuilding Automatic Musical Instruments (Robert L. Baker)-----	3
Concern of Polyurethane Film Life (Durrell Armstrong)-----	4
Polyurethane Film Discussion Continued (David P. Gunner)-----	5
Technical Purism (Nathan F. Woodhull)-----	6
Do's and Don't's of Gluing (Nathan F. Woodhull)-----	6
A Helpful Tool (Bob Bissell)-----	6
Warning (Harvey Roehl)-----	7
More on Clear Plastic Tubing Problems (Harvey Roehl)-----	7
Rubber Cement as a Leather Sealant (John Morgan)-----	7
The Mills Violano (Bill Johnson)-----	8
Link Type RX Music Rolls (Lyle W. Martin)-----	9
Fallboard Decal Replacement (Terry Smythe)-----	10
The Winchester House Link Orchestrion (Mel Luchetti)-----	11
Build Your Own Perforator (Bob Bissell)-----	11
Pumper to Nickelodeon Conversion Techniques (Jeffry Wisnia)-----	12
A Useful Device for Servicing Player Grand (Alan Pier)-----	19
The Money Magnet (Michael L. Kitner)-----	20
Rapid Roll Repair Rig (Jeffry Wisnia)-----	23
Foot Notes (John Edwards)-----	24
Buying an Unrestored Upright Player Piano (David T. Dupree)-----	26
More on Buying A Player Piano (Nathan F. Woodhull)-----	27
Good and Bad Player Actions Continued (Rann L. Vaulx)-----	28
Reflection Through a Brass Tracker Bar (Thomas M. Steuer)-----	29
Emphasizing the Theme in a Player Piano (Scientific American)-----	30
The Construction & Tuning of Vibrating Bars (W. E. Flynt)-----	31
The Construction, Tuning & Repair of Tubular Chimes (W. E. Flynt)-----	33
Air Motors (Nathan F. Woodhull)-----	34
Low Cost Vacuum/Pressure Gauges (Jeff Wisnia)-----	35
Directions for Building a Manometer (Paul Dietz)-----	36
High Altitude Problems (Steve Johnson)-----	36
More on High Altitude Problems (Art Reblitz)-----	37
The Physics (Maybe) of High Altitude Pneumatics (Jeff Wisnia)-----	37
The Paper-Skidding Problem on Long Rolls: A Possible Solution (W. Flynt)--	38
An Idea for Improving Modern Recuts (Austen Graham)-----	38
More on Recut Roll Slippage (Steve Chapman)-----	38
Technicalities (John Patten)-----	39
Paper Speed-Up on Long Rolls (Bill Flynt)-----	39
Service Call Stumpers (John Edwards)-----	40
Tone Regulating and Voicing the Piano (James Aber)-----	40

SECTION II: THE AMPICO

Ampico Perforation Step Distance: Some Exceptions (William Flynt)-----	46
Technicalities (John Patten)-----	47
Ampichron B. Vorsetzer (Jim Fleagle)-----	48
Franklin Marque Ampico (Ian T. McDonald)-----	50
Ampico A--What the Tracker Bar Misses (Jeff Wisnia)-----	51
Pattern for Ampico B Sleeve Pneumatics (Dick Howe)-----	52
Problem with Ampico B Drawer (Bob Sykes)-----	52
The Paper Skidding Problem on Long Rolls (Bill Flynt)-----	53
Odds & Ends (Steve Chapman)-----	53
Ampico's Answer to Tracker Bar Dragging (Jeff Wisnia)-----	54
Ampico's Design Modifications that Affect Listening Pleasure (T. Grattello)	55

Ask Dr. Pneumatic (John Edwards)-----	56
Play "B" Jumbo Rolls on Ampico "A" (Steve Johnson, Jr.)-----	57

SECTION III: THE DUO-ART

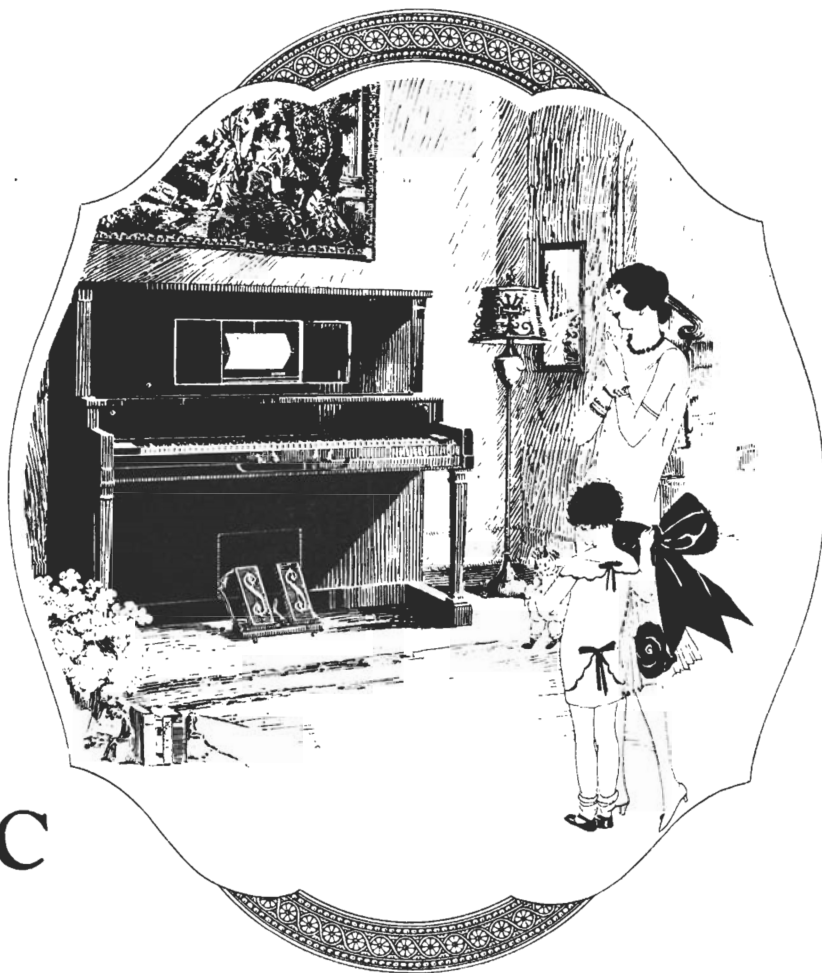
The Late Duo-Art in a Drawer (Sam Thompson)-----	58
Numalon Pneumatics & Perflex Pouches; Rebuilding a Steinway Duo-Art	
Grand Pneumatic Stack (Chester Kuharski)-----	59
More on Understanding and Restoring Duo-Art Mechanisms (C. Kuharski)-----	61
Taking the Knock out of Duo-Art (Nick Jarrett)-----	64
Better Replacement Bearings for Duo-Art Pump Arms (C. Kuharski)-----	64
Duo-Art Questions Resolved (Gerald Stonehill)-----	64
On Soft Duo-Art Playing (Tom Grattelto)-----	64

SECTION IV: REPRODUCING PIANOS, ORGANS & PHONOGRAPHS

Welte-Mignon Licensee (Harvey Roehl)-----	65
Recordo Banner Still Flies (Bob Billings)-----	67
"C" Recordo Confirmed (Bob Billings)-----	69
Recordo Piano with Dual Expression Systems (Alan R. Pier)-----	70
Artrio Angelus--Alive & Well in Walnut Creek (Bill Wherry)-----	72
Instructions for Installing Electra Reproducer (Bill Mintz)-----	73
Instructions for Installing the Electra Motor Pump without Reproducer	
Box (Bill Mintz)-----	75
American Pianos Available with Welte-Mignon: The Bush & Lane Piano	
Company of Seattle-----	77
How Many Pianos Had The Welte-Mignon (Licensee) Mechanism (Bill Pixley)--	78
Apollo Comes Back Again This April in Woodside (Bill Wherry)-----	79
Seeking MSR Rolls and Players (Robert L. Baker)-----	79
The Seeburg Mortuary Organ (Thomas G. Beckett III)-----	81
The Incredible Credenza (Dick Barnes)-----	85
Credenza Questions & Answers (Dan D. Tenerowicz & Dick Barnes)-----	86
Aeolian in the Rockies (Dick Barnes)-----	87
Meadowbrook Hall (Dennis Ferrara)-----	88
Duo-Art Organ Follow-Up (Bill Schneider)-----	89
The Aeolian-Hammond Player Organ (Robert L. Baker)-----	90
Duo-Art Pipe Organ: Pneumatic Electric (Bill Schneider)-----	92
Adding Pipes to Players (Thomas G. Beckett III)-----	92

Select your Player Piano

The Happiness That Comes With MUSIC



A REVOLUTION IN REBUILDING AUTOMATIC INSTRUMENTS

by Robert L. Baker

For as long as synthetic materials have been available, automatic musical instrument restorers and their customers have questioned the synthetics' value relative to the original "natural" supplies. Should one rebuild a Seeburg stack with pneumatic rubber cloth, or polyurethane-nylon (Polylon)? Are pouches better replaced with natural pouch leather or with polyurethane films? If Polyton is used in a stack, which glue is best? Is hot glue to be preferred over white glue? The entire area is so fraught with uncertainty that one is easily frightened into inactivity. Whom can you trust? What's best?

If I were offered a simple solution to this fearful uncertainty, I would be more skeptical than most. After all, what could be worse than proceeding to rebuild a valued instrument according to an "expert's" advice only to find oneself several years later with a prematurely deteriorated machine? Now, one has some careful research done by a pipe organ craftsman-technician (who is also an automatic musical instrument rebuilder) to suggest a scientific answer to the confusion.

Allen R. Miller, assistant vice-president of Austin Organs, Inc., wondered whether a polyurethane film he found being used in air-actuators would work in pneumatics. His goal was a non-deteriorating material for use in pipe organs and other pneumatic instruments which would withstand atmospheric pollutants and other conditions which prematurely aged natural leathers and even Polyton in a few years.

The first commercial uses of this polyurethane film in pneumatics, PERFLEX-E,* seemed quite good in that pneumatic speed of action, repetition, and life were far superior to leather. In test actions, leather ruptured at 50,000 cycles, Polyton at 15 million cycles, while PERFLEX-E was still air-tight and hole-free at 90 million cycles.

Unfortunately, six months after its introduction, PERFLEX-E suffered glue-bond failures. In commercial pipe organ production, this was a catastrophe which set Allen Miller to finding a fail-safe bonding agent. He soon found PVC-E, a synthetic glue used in the furniture manufacturing trade to bond vinyl to wood. The PERFLEX-E, PVC-E, and a simple heat-curing operation resulted in a boon for automatic musical instrument enthusiasts since these materials have proven themselves far superior to any others, synthetic, or natural.

However, this new system is not limited to pneumatics. The PERFLEX-E--PVC-E combination also lends itself beautifully to the mass-replacement of pouches in valve systems. Where before one had to laboriously punch out and individually glue leather circles to pouch holes, one may now bond one sheet of PERFLEX-E to a sanded pouchboard, let it cure, and then with a heat-gun mass-produce all the pouches rapidly in one sequence. The heat-gun is directed to a future pouch, and, as the PERFLEX-E softens, it is pouched with a simple forming tool.

By virtue of its thinness, .002" (or 2 mils), PERFLEX