

## Finding Aid to the United Manufacturing Co. Records, 1945-1964

### Summary Information

**Title:** United Manufacturing Co. records

**Creator:** United Manufacturing Co. (primary)

**ID:** 2019.united

**Date:** 1945-1964 (inclusive)

**Extent:** 22.5 linear feet

**Language:** This collection is in English.

**Abstract:** The United Manufacturing Co. records are an assemblage of game design documentation (mainly wiring diagrams and disc diagrams) for projects produced by United during the late 1940s through its merger with Williams in 1964.

**Repository:**

Brian Sutton-Smith Library and Archives of Play at The Strong  
One Manhattan Square  
Rochester, New York 14607  
585.263.2700  
library@museumofplay.org

### Administrative Information

**Conditions Governing Use:** This collection is open for research use by staff of The Strong and by users of its library and archives. Though intellectual property rights (including, but not limited to any copyright, trademark, and associated rights therein) have not been transferred, The Strong has permission to make copies in all media for museum, educational, and research purposes.

**Custodial History:** The United Manufacturing Co. records were donated to The Strong in November 2017 as a gift from Kenneth and Brigitte Fedesna. The papers were accessioned by The Strong under Object ID 117.9829 and were received from Fedesna in two large boxes, along with library materials, two arcade games, and the Ken Fedesna papers.

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**Processed by:** Julia Novakovic, April 2019

### Controlled Access Terms

#### Personal Names

- Durant, Lyndon A. ("Lyn")
- Fedesna, Ken
- Horlick, Gordon T.
- Williams, Harry E.

#### Corporate Names

- United Manufacturing Co.
- Williams Manufacturing Co.

**Subjects**

- Arcades
- Bowling games
- Coin-operated machines
- Electromechanical devices
- Electronic games
- Electronic games--History
- Indoor games
- United Manufacturing Co.

**Historical Note**

In 1941, Harry Williams and Lyndon (“Lyn”) Durant worked for Exhibit Supply in Chicago, Illinois. While Exhibit Supply manufactured great quality games, the company did not plan to apply for war contracts, as several other electromechanical game companies were doing during World War II. Williams and Durant formed a new company called United Manufacturing to refurbish games and obtain wartime manufacturing contracts. Williams left United in Durant’s hands in 1942 (and the following year, he established Williams Manufacturing Company).

United Manufacturing continued converting and revamping existing games during the 1940s, but soon began developing their own amusement games. United excelled at creating table bowling games and shuffle alleys. In 1950, score reels (rotating drums which kept score on an electromechanical game) debuted on bowling machines produced by United. The company expanded into skee-ball, target and rifle, baseball, pool, bingo, and other popular electromechanical game types.

During June 1964, The Seeburg Corporation (well-known for its jukeboxes) acquired Williams Manufacturing Co. as a fully owned subsidiary, to operate under Williams’ president Sam Stern. A few months later, in September 1964, Seeburg purchased the assets of United Manufacturing, absorbing the company into the Williams division and effectively halting the creation of any more games under the United name.

**Collection Scope and Content Note**

The United Manufacturing Co. records contain game design documentation, including wiring, switch, disc, and circuit diagrams. Other materials within this collection include notes, instruction drafts, bills of materials, and work-to-part prints. Electromechanical game types covered within these records are bowling games, shuffle alleys, bingo, baseball, skee-ball, and target games. Additional scope and content information can be found in the “Contents List” section of this finding aid.

The United Manufacturing Co. records are arranged into one series. The materials are housed in three archival document boxes, two oversized flat folders, and 19 rolled storage boxes.

## System of Arrangement

Series I: Game design documentation, 1945-1964

## Contents List

### Series I: Game design documentation, 1945-1964

**Scope and Content Note:** This series houses disc diagrams, wiring diagrams, parts diagrams, circuit diagrams, notes, instruction drafts, and more. The materials in this series are filed alphabetically in boxes/folders or in rolled storage boxes. When possible, the drawing type is indicated after the game title in each folder.

Folder titles are retained from the original transfer to the museum. For example, an abbreviation such as “B.A.” means “bowling alley” and “S.A.” means “shuffle alley.” Spelling of words is maintained from the original documents. Most materials do not indicate the original creator of the document.

### Box 1

- Folder 1 3 Way S.A. – disc diagrams, wiring diagrams, parts diagrams, instruction drafts; 1959
- Folder 2 5-Ball – disc diagrams, 1964
- Folder 3 5-Star Bowling Alley – disc diagrams and wiring diagrams, 1961
- Folder 4 5-Way S.A. – disc diagrams, wiring diagrams, and notes; 1961
- Folder 5 5th Inning – disc diagrams, 1955
- Folder 6 6 Star Regulation Shuffle Alley – disc diagrams and wiring diagrams, 1957
- Folder 7 7 Star B.A. – disc diagrams, 1961
- Folder 8 10th Frame Star Shuffle Alley – disc diagrams, 1952
- Folder 9 10th Frame Super Shuffle Alley – disc diagrams, 1952
- Folder 10 11th Frame Shuffle Alley – disc diagrams, 1954
- Folder 11 Ace Bowling Alley – disc diagrams, wiring diagrams, and notes; 1960
- Folder 12 Ace and Rainbow Shuffle Alley – disc diagrams, 1953-1954
- Folder 13 Action Shuffle Alley – disc diagrams and wiring diagrams, 1961-1962
- Folder 14 Advance B.A. – disc diagrams, wiring diagrams, and notes; 1959
- Folder 15 Alamo – disc diagrams, wiring diagrams, and notes; 1961-1962
- Folder 16 Astro Shuffle Alley – disc diagrams, wiring diagrams, score light diagrams; 1963
- Folder 17 Avalon Shuffle Alley and Silver Roll Down – disc diagrams and notes, 1961-1962
- Folder 18 Bank Pool – disc diagrams, 1963
- Folder 19 Big Bonus Shuffle Alley – parts diagrams, wiring diagrams, and notes; 1959-1960
- Folder 20 Bomb Fuze – reference engineering drawings, 1951
- Folder 21 Bonus Baseball – wiring diagrams and notes, 1962
- Folder 22 Bonus Bowling Alley – disc diagrams and notes, 1958
- Folder 23 Bonus Gun – disc diagrams and wiring diagrams, 1954
- Folder 24 Bowl-A-Rama – disc diagrams, wiring diagrams, and notes; 1960
- Folder 25 Bowling Alley – disc diagrams, wiring diagrams, and notes; 1956
- Folder 26 Bowlo – wiring diagrams, coil list, and notes; 1959
- Folder 27 Build-Up S.A. – disc diagrams, 1955-1956

**Box 2**

- Folder 1 Cameo B.A. – disc diagrams and notes, 1962
- Folder 2 Capitol S.A. – disc diagrams, 1954-1955
- Folder 3 Capri S.A. – disc diagrams, 1963
- Folder 4 Caravelle S.A. – disc diagrams, 1963
- Folder 5 Carnival Gun – disc diagrams, 1954
- Folder 6 Cascade Shuffle Alley – disc diagrams, 1953
- Folder 7 Chief Shuffle Alley – disc diagrams and wiring diagrams, 1960
- Folder 8 Circus Roll Down – disc diagrams, 1962
- Folder 9 Classic Deluxe Bowling Alley – wiring diagrams, switch diagrams, and notes; 1961
- Folder 10 Clipper S.A. – disc diagrams, 1955
- Folder 11 Clover Shuffle Alley – disc diagrams, 1953
- Folder 12 Comet Shuffle Targette – disc diagrams, 1954
- Folder 13 Contest Shuffle Alley – disc diagrams, n.d.
- Folder 14 Crest S.A. – disc diagrams, score readout charts, and notes; 1963
- Folder 15 Crystal Shuffle Alley – disc diagrams, wiring diagrams, and notes; 1961-1962
- Folder 16 Cyclone S.A. – disc diagrams, wiring diagrams, and notes; 1957-1958
- Folder 17 Cypress Bowling Alley – disc diagram, n.d.
- Folder 18 Deluxe Baseball [Yankee Baseball] – disc diagrams and wiring diagrams, 1959
- Folder 19 Deluxe Bowlarama – disc diagrams, wiring diagrams, and bill of materials; 1961
- Folder 20 Deluxe Bowling Alley – disc diagrams and notes, 1957
- Folder 21 Deluxe Shooting Star – disc diagrams and wiring diagrams, 1958
- Folder 22 Derby Roll – disc diagrams, 1955
- Folder 23 Dixie Bowling Alley – disc diagrams, wiring diagrams, and notes; 1960
- Folder 24 Dolphin Shuffle Alley – disc diagrams, 1961
- Folder 25 Dual Shuffle Alley – disc diagrams and wiring diagrams, 1958
- Folder 26 Duplex Bowling Alley – disc diagrams, wiring diagrams, parts diagrams, and notes; 1958
- Folder 27 Eagle Shuffle Alley and Atlas – disc diagrams and parts diagrams, 1957-1958
- Folder 28 El Grande – disc diagrams, 1969-1970
- Folder 29 Embassy Shuffle Alley – disc diagrams, 1962
- Folder 30 Empire Shuffle Alley – parts diagrams and notes, 1959
- Folder 31 Falcon Bowling Alley – disc diagrams and notes, 1960
- Folder 32 Flash Pool – disc diagram, 1956
- Folder 33 Flash S.A. – disc diagrams and wiring diagrams, 1959
- Folder 34 Frolics Bowling Alley – disc diagrams and wiring diagrams, 1961
- Folder 35 Fury B.A. – disc diagrams, 1963

**Box 3**

- Folder 1 Gypsy S.A. – disc diagrams and notes, 1962
- Folder 2 Handicap B.A. – wiring diagrams, coil list, and notes; 1959
- Folder 3 Handicap Shuffle Alley – disc diagrams and notes, 1955-1956
- Folder 4 Hi Score Bowling Alley – disc diagrams, wiring diagrams, and notes; 1957
- Folder 5 Hi-Score Pool – disc diagrams, 1956
- Folder 6 Hit Pool – disc diagrams, 1956

- Folder 7 Holiday Bowling Alley – disc diagrams and notes, 1961-1962
- Folder 8 Imperial and Royal Shuffle Alley – disc diagrams, 1953
- Folder 9 Jumbo Bowling Alley – disc diagrams, wiring diagrams, and notes; 1957-1958
- Folder 10 Jungle Gun – disc diagrams and notes, 1954
- Folder 11 Jupiter – disc diagrams, coil list, and wiring diagrams; 1958
- Folder 12 Kingpin – disc diagrams and wiring diagrams, 1958
- Folder 13 Lancer (Bowling?) – game play statistics and play test forms, 1962-1963
- Folder 14 Lancer Shuffle Alley – disc diagrams, 1962
- Folder 15 Leader and Chief Shuffle Alley – disc diagrams, 1953
- Folder 16 League Bowling Alley – wiring diagrams, instruction drafts, and notes; 1959
- Folder 17 Lightning Shuffle Alley – disc diagrams, 1953-1955
- Folder 18 Line-Up Shuffle Alley – letters, wiring diagrams, switch diagrams, instruction sheets, and notes; 1960
  
- Folder 19 Mars Shuffle Alley – disc diagrams, 1954
- Folder 20 Mercury Shuffle Alley – disc diagrams, 1954
- Folder 21 Midget Alley – disc diagrams, wiring diagrams, and notes; 1958
- Folder 22 New Regulation S.A. – disc diagrams and wiring diagrams, 1955-1956
- Folder 23 Niagara S.A. – disc diagrams and wiring diagrams, 1958
- Folder 24 Old Team Shuffle Alley – disc diagrams and wiring diagrams, 1952-1953
- Folder 25 Olympic and Classic Shuffle Alley – disc diagrams, 1953
- Folder 26 Pirate Gun – disc diagrams, 1956
- Folder 27 Playboy – disc diagrams and wiring diagrams, 1961
- Folder 28 Playtime Bowling Alley – disc diagrams, wiring diagrams, and notes; 1958
- Folder 29 Pool Alley – disc diagrams and wiring diagrams, 1956
- Folder 30 Pool Game – disc diagrams and wiring diagrams, 1963

**Box 4**

- Folder 1 Regal B.A. – disc diagrams, 1963
- Folder 2 Regulation Shuffle Alley – disc diagrams, 1952-1953
- Folder 3 Rio Shuffle Alley – disc diagrams and notes, 1960
- Folder 4 Roto Pool – disc diagrams, 1956
- Folder 5 Royal Bowling Alley – disc diagrams, wiring diagrams, and notes; 1957
- Folder 6 Rumpus Targette – disc diagrams, wiring diagrams, and notes; 1963
- Folder 7 Sabre B.A. – disc diagrams and notes, 1963
- Folder 8 Sahara Bowling Alley – disc diagrams and wiring diagrams, 1961-1962
- Folder 9 Select Play S.A. – disc diagrams and wiring diagrams, 1956
- Folder 10 Shooting Star – disc diagrams and parts diagrams, 1958
- Folder 11 Shuffle Bonus Baseball – disc diagrams, 1962
- Folder 12 Shuffle Playmate – disc diagrams, 1959
- Folder 13 Simplex Bowling Alley – disc diagrams, wiring diagrams, and notes; 1959-1961
- Folder 14 Skippy S.A. – disc diagrams, 1963
- Folder 15 Sky Raider – disc diagrams, wiring diagrams, bill of materials, drum type unit chart, and notes; 1958
  
- Folder 16 Sparky S.A. – disc diagrams, wiring diagrams, and notes; 1961-1962
- Folder 17 Special Deluxe Bowlarama – disc diagrams, parts diagrams, and notes; 1961
- Folder 18 Stardust S.A. – disc diagrams and notes, 1961

- Folder 19 Star Slugger – disc diagrams and wiring diagrams, 1956
- Folder 20 Super Bonus S.A. – disc diagrams, 1955
- Folder 21 Super Slugger – disc diagrams, 1955-1956
- Folder 22 Sure Fire Shuffle Alley – wiring diagrams and notes, 1960
- Folder 23 Targette S.A. – disc diagrams, 1954
- Folder 24 Team Bowling Alley – disc diagrams, wiring diagrams, and notes; 1957
- Folder 25 Team-Mate B.A. – disc diagrams and wiring diagrams, 1959
- Folder 26 Team Shuffle Alley – disc diagrams, 1953-1954
- Folder 27 Tempest – disc diagrams and notes, 1963-1964
- Folder 28 Top Notch S.A. – disc diagrams, wiring diagrams, and notes; 1955
- Folder 29 Tornado B.A. – disc diagrams, 1964
- Folder 30 Tropics B.A. – disc diagrams, wiring diagrams, and notes; 1961-1962
- Folder 31 Ultra S.A. – selection unit diagrams, 1963
- Folder 32 Venus Shuffle Targette – disc diagrams, 1955
- Folder 33 Viking Shuffle Alley – disc diagrams and wiring diagrams, 1961
- Folder 34 Vogue – disc diagrams, 1956
- Folder 35 Yankee Shuffle Alley – disc diagrams, 1952-1954
- Folder 36 Zenith Shuffle Alley – disc diagrams, wiring diagrams, and installation instructions; 1959
- Folder 37 Unidentified game(s) – sketch, disc diagrams, and wiring diagrams; n.d.
- Folder 38 United Manufacturing Co. diagram templates, n.d.

**Box 5**

- Folder 1 Atlas Shuffle Alley – wiring diagrams, switch diagram, and game description; 1958
- Folder 2 Cyclone Shuffle Alley – coil lists, memos, diagrams, and wiring diagrams; 1958
- Folder 3 Hi-Score Bowling Alley – coil lists, wiring diagrams, notes, and memos; 1957
- Folder 4 Jumbo Bowling Alley – game description, memos, and wiring diagrams; 1957-1958
- Folder 5 Midget Alley – installation instructions, memos, wiring diagrams, coil lists, and notes; 1958
- Folder 6 Pixie Bowler – coil list, description, memos, notes, installation instructions, and wiring diagrams; 1958
- Folder 7 Playtime Bowling Alley – memos, notes, coil lists, and wiring diagrams; 1958
- Folder 8 Royal Bowling Alley – diagrams, installation instructions, memos, notes, and game descriptions; 1957-1958
- Folder 9 Sky Raider – drawings, wiring diagrams, and memos; 1958

**Oversized**

- Folder 1 Various games – score motor switch diagrams and misc. diagrams, c. 1950s
- Folder 2 Unidentified game cabinet blueprint pages, GTH [Gordon Horlick?], 1945

**RS Box 1**

Havana – wiring diagrams, 1947, 1953

**RS Box 2**

Caribbean – wiring diagram, 1948  
Mexico – wiring diagram, n.d.  
P-2040-MO and ST-2014-MO – parts diagrams, n.d.  
Pinch-Hitter – wiring diagram, 1949  
Rio – wiring diagram, 1947  
Sea Breeze – wiring diagram, 1946

**RS Box 3**

Aquacade – wiring diagram, 1949  
Dynamic B.A. – score motor switch diagram, n.d.  
Monterrey – wiring diagram, 1948  
Ramona – wiring diagram, 1949  
Red Shoes – wiring diagram, 1950  
Showboat – wiring diagram, 1949  
Stardust – wiring diagram, 1948

**RS Box 4**

3-4-5 – wiring diagram, 1951  
Arizona – wiring diagram, 1950  
Deluxe 6-Player Shuffle Alley – wiring diagram, 1951  
Double Shuffle Alley – wiring diagram, 1950  
Oklahoma – wiring diagram, 1949  
Shuffle Skill – wiring diagram, 1949  
Singapore – wiring diagram, 1947  
Tampico – wiring diagram, 1949  
Twin Shuffle Alley Rebound – wiring diagram, 1950  
Utah – wiring diagram, 1949

**RS Box 5**

5-Player Shuffle Alley – wiring diagram, 1950  
A-B-C – wiring diagram, 1951  
Carolina – wiring diagram, 1949  
Double Shuffle Alley Express Rebound – wiring diagram, 1950  
Zingo – wiring diagram, 1951

**RS Box 6**

Blue Skies – wiring diagram, 1948  
Moon Glow – wiring diagram, 1948  
Paradise – wiring diagram, 1948  
Rio – wiring diagram, 1953  
Serenade – wiring diagram, 1948  
Showboat – wiring diagram, 1952  
Shuffle Slugger – wiring diagram, 1950  
Summertime – wiring diagram, 1948  
Tahiti – wiring diagram, 1953

**RS Box 7**

Shuffle Alley Express – wiring diagrams, 1950

**RS Box 8**

6-Player Manhattan Shuffle Alley – wiring diagram, 1952  
6-Player Super Shuffle Alley – wiring diagram, 1952  
Double Shuffle Alley Conversion – wiring diagram, 1950  
Nevada – wiring diagram, 1947  
Shuffle Alley Conversion – wiring diagram, 1950

**RS Box 9**

Bolero – wiring diagram, 1951  
Cascade Shuffle Alley – wiring diagram, 1953  
Stardust – wiring diagram, 1956  
Twin Shuffle-Cade – wiring diagram, 1950

**RS Box 10**

Bolero – wiring diagram, 1951  
Circus – wiring diagram, 1952  
Mexico – wiring diagram, 1954  
Rodeo – wiring diagram, 1953

**RS Box 11**

Hawaii – wiring diagram, 1947  
Major League Baseball – wiring diagram, 1945  
Rio – wiring diagram, 1953  
Tahiti – wiring diagram, 1953  
Tropicana – wiring diagram, 1948  
Tropics – wiring diagram, 1953

**RS Box 12**

10th Inning – wiring diagram, n.d.  
4-Player Shuffle Alley – wiring diagram, 1950  
Rainbow Shuffle Alley – wiring diagram, 1954  
Shuffle Alley Rebound – wiring diagram, 1950  
Skee Alley – wiring diagram, 1950

**RS Box 13**

Stars – wiring diagram, 1952  
Steeplechase – wiring diagram, 1952  
Touchdown – wiring diagram, 1951

**RS Box 14**

Carnival Gun – wiring diagram, 1954  
Chief Shuffle Alley – wiring diagram, 1953  
Deluxe Lightning Shuffle Alley – wiring diagram, 1955  
Official Shuffle Alley – wiring diagram, 1952

**RS Box 15**

League Shuffle Alley – wiring diagram, 1954  
Showboat – wiring diagram, 1952  
Tropics – wiring diagram, 1953

**RS Box 16**

Deluxe Bonus Gun – wiring diagram, 1954  
Deluxe Jungle Gun – wiring diagram, 1954



**RS Box 17**

Work to Part prints, Danly Die Set, 1945

**RS Box 18**

Work to Part prints, Danly Die Set, 1945

**RS Box 19**

Work to Part prints, Danly Die Set, 1945