# Development of Interactive Resources from the WPI Video Game Archive's Intellivision Materials

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Report Submitted to:

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# **ABSTRACT**

This project focuses on the WPI Gordon Library's Video Game Archive, specifically its items related to the 1979 Mattel Intellivision. The project aims to increase the collection's utility by putting together a detailed history of the console, identifying historically important games and creating protocols for expanding the collection, and creating a station from which researchers can use the Intellivision with supporting documentation for its access and maintenance. The project successfully transformed this collection of materials into an interactive historical record.

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# **TABLE OF CONTENTS**

ABSTRACT	1
ACKNOWLEDGEMENTS	2
TABLE OF CONTENTS	3
EXECUTIVE SUMMARY	5
Overview of Methods	5
Final Recommendations	6
1 - Introduction	7
2 - Background/literature review	8
The Second Generation of Console Gaming	8
Arcade Games and the First Generation of Home Consoles	8
Second-Generation Innovations	8
Atari Vs. Mattel	9
Hardware	9
Table 1. Comparison of basic hardware, Atari 2600 vs Intellivision.	9
Marketing and Game Production	10
Video Game Crash and Downfall of Mattel Electronics	10
Video Game Crash of 1983	10
Intellivision Post-Mattel Electronics - INTV Corp	11
Future of Intellivision - Intellivision Lives! and Intellivision Amico	11
3 - Methods	12
Station Setup and Use Guide	12
Inventory and Maintenance Guide	13
Accession Guide	13
Interactive Exhibit	15
4 - Conclusion and recommendations	16
REFERENCES	18
APPENDIX A: Access and operation	19
Setting up the Station	19
Using the Intellivision	20
Returning the Station	21

APPENDIX B: Current Inventory  APPENDIX C: Intellivision Maintenance and Cleaning						
Upon Failure of a Cartridge	23					
Cleaning a Non-Functional Cartridge	24					
Cleaning with Compressed Air	24					
Cleaning with Alcohol	24					
Cleaning by Abrasion	24					
APPENDIX D: Intellivision Accession Guide	25					
APPENDIX E: Accession Rating Guide - Notes on Every Intellivision Game	27					

# **EXECUTIVE SUMMARY**

This project works with the items in the Gordon Library's video games collection, specifically the items in this collection related to the Intellivision, a video game console released by Mattel Electronics in 1979. Prior to this project, the Intellivision and its games were simply stored in boxes in the Gordon Library; without the equipment required to use these materials or information on their use and care, they were of little use to researchers. The goal of this project was to gather these materials and information to transform these Intellivision materials into a resource for WPI students and faculty. Additionally, the project aimed to aid future research and learning by compiling a variety of information about the console, its games, and their place in the history of video games.

## **Overview of Methods**

- Station Setup and Use Guide: In order to create a usable and accessible station from the Intellivision materials in the archive, I identified and assembled the items required to make the Intellivision function, then learned how to operate this collection of materials. Using these materials and information, I created a self-contained station for the Intellivision and wrote a guide on using this station for future research and education.
- Inventory and Maintenance Guide: In order to work with the Intellivision materials in the archive, I assessed the archive's current collection, learned how to properly maintain Intellivision materials, and learned how to restore the function of materials that were broken or unusable. In addition to using this information to work with the Intellivision collection for the duration of the project, I documented this knowledge in the form of an inventory list and a care and maintenance guide.
- Accession Guides: In order to aid the future expansion of the archive's Intellivision collection, I created a reference document that could be used to quickly evaluate games and peripherals for acquisition. For each cartridge and peripheral released for the Intellivision, I identified the item's financial value in the current resale market, notable features, and value to the collection. Additionally, I created a document for use by archivists upon receipt of new materials to integrate them into the collection.
- Interactive Exhibit: At the start of this project, I had also planned to create an interactive exhibit in the Gordon Library to generate interest in the video game archive and educate students about the Intellivision and its place in video game history. The exhibit would have included both physical items and printed marketing materials displayed with information about them. To further engage students, tournaments would be hosted to allow visitors to play a selection of Intellivision games. The exhibit was scheduled to go for three days in late March; however, the global COVID-19 outbreak caused all events on campus to be canceled, including this exhibit.

#### **Final Recommendations**

With the project meeting most of its goals, the most important work to be done with this collection is to keep it up to date to reflect changes in the collection and in the Intellivision resale market. While the exhibit did not happen, it is not critical to the fulfillment of the project's goals; however, if there is interest in putting on such an exhibit in the future, it would most likely lead to the Intellivision collection seeing more use by students and faculty. That said, my future recommendations are as follows:

- If the Intellivision station is expected to see use for a particular event or activity, overlays
  and possibly manuals not included in the collection should be created in preparation by
  printing digitally stored copies<sup>1</sup>. It may also be a good idea to test games that are
  expected to see use before such an event and update the inventory if anything is
  different.
- The spreadsheet of notes, pricing information, and accession ratings for every Intellivision game will eventually become outdated and need to be updated. If the collection expands significantly, the value of particular items to the collection will change as they partially depend on what is already in the collection. If enough time passes, games may change in resale price or even relevance (smaller studios or game franchises may resurge in importance, especially with a new Intellivision-branded console releasing in October 2020) and need to be re-evaluated.
- An effort should be made to acquire games determined to be of high importance to increase the educational and research value of the collection. Additionally, an effort should be made to acquire an Intellivoice Voice Synthesis Module to enable Intellivoice games (one of which is currently in the collection) to be played.

6

<sup>&</sup>lt;sup>1</sup> https://drive.google.com/drive/folders/1mh-20BnCi-PbIHOw0R73yttZLqBBBa90

# 1 - Introduction

The Archives and Special Collections at WPI's Gordon Library comprise several collections that relate to WPI or Worcester history, highlight the careers of WPI alumni or faculty, support WPI curricula, or reflect research interests of faculty or students<sup>2</sup>. Among these is a collection of video game materials supporting the Interactive Media and Game Development curriculum, containing many games and systems spanning decades of video game history. The utility of these items to WPI students and faculty is severalfold, providing information about the history of video game marketing, game development, and system hardware among other things.

Since the video game collection was established in 2006 by two IQPs<sup>3</sup>, several other projects have been completed to promote the collection's utility and accessibility<sup>4</sup>. Some of these projects have focused on individual consoles, working with the materials in the collection related to a particular system and creating a sub-collection with a directed purpose, written history, and protocols for the sub-collection's access and expansion. This project is similarly focused on the Mattel Intellivision, a video game console released in 1979, and its games. With the goal of making another collection which can be easily utilized and expanded, I achieved the following:

- Put together a researched history of the Intellivision which supports IMGD and related curricula by providing historical information about game development, game and console marketing, console hardware, and game industry competition in the 1970s and 1980s.
- Created a station containing the Intellivision, its games, and all necessary peripherals to allow researchers to use the Intellivision-relation materials in the collection, supported by an inventory of these materials, a guide for using the station, and a guide for maintaining and repairing these materials.
- Conducted research on every Intellivision game for historical relevance, development information, and resale market pricing, creating guides for archivists to seek out and evaluate Intellivision games and add them to this collection.

<sup>&</sup>lt;sup>2</sup> "Gordon Library: Collections." WPI, web.wpi.edu/academics/library/about/collections.html.

<sup>&</sup>lt;sup>3</sup> Arnold, Matthew, Benecke, Nikki, Perry, Brendan (2006). Establishing a Collection of Video Game Ephemera. Retrieved from: <a href="https://digitalcommons.wpi.edu/gordonlibrary-studentreports/9">https://digitalcommons.wpi.edu/gordonlibrary-studentreports/9</a>;

Germain, B. M., Sutman, E. B., & Foertsch, M. J. (2006). The game archives projects. Retrieved from https://digitalcommons.wpi.edu/igp-all/5076

<sup>&</sup>lt;sup>4</sup> Chung, C. R., Chipman, J. D., & Fanara, S. Z. (2010). ESTABLISHING A VIDEO GAME STUDY AREA. Retrieved from <a href="https://digitalcommons.wpi.edu/iqp-all/1492">https://digitalcommons.wpi.edu/iqp-all/1492</a>;

Welch, S. P. (2017). Revised Atari Collection and Maintenance Policies of the WPI Gordon Library. Retrieved from <a href="https://digitalcommons.wpi.edu/iqp-all/533">https://digitalcommons.wpi.edu/iqp-all/533</a>;

Tang, D. Y., & Samih, R. (2018). Expanding the Video Game Archive at Gordon Library. Retrieved from https://digitalcommons.wpi.edu/iqp-all/2492;

Sargent, A. L., Kreiselman, J., & Peters, R. C. (2019). WPI's Gordon Library Video Game Archive Collection and Use Pertaining to the Nintendo Entertainment System. Retrieved from <a href="https://digitalcommons.wpi.edu/igp-all/5354">https://digitalcommons.wpi.edu/igp-all/5354</a>.

# 2 - BACKGROUND/LITERATURE REVIEW

# The Second Generation of Console Gaming

While the Intellivision was a very early home video game console, it is considered to be in the "second generation" of consoles<sup>5</sup>. The second generation of video game consoles comprises a number of systems released between 1976 and 1984 which build upon first-generation systems using innovative hardware.

# Arcade Games and the First Generation of Home Consoles

The commercial video game industry started in the early 1970s with two majors forms of gaming: coin-operated systems for installation in arcades and other businesses, and home video game consoles that connected to home television sets.

The first mass-manufactured and commercially sold video game was *Computer Space*, a coin-operated cabinet-style arcade shooter game<sup>6</sup>. Released in 1971 by a company that would become Atari, and followed by Atari Pong the following year, this event spawned an entire industry of innovative coin-operated systems<sup>7</sup>. These early systems used specialized hardware and displays rather than general computers to save on costs and space, and the next decade of arcade games brought classics such as Space Invaders (1978), Asteroids (1979), Pac Man (1980), and Donkey Kong (1981)<sup>8</sup>. In addition to Atari, the release and subsequent success of these games brought companies such as Nintendo and Sega into the video game industry.

Meanwhile, the first generation of home video game consoles began with the Magnavox Odyssey in 1972<sup>9</sup>. Like all first-generation consoles, the Odyssey did not run games from ROM (read-only memory) cartridges, but instead came pre-programmed with a number of games. Over the next five years, Magnavox, Nintendo, and Coleco each released several consoles with a small handful of games on each, while Atari and Epoch released the single-game systems Home Pong and Electrotennis<sup>10</sup>.

# **Second-Generation Innovations**

In 1976, the release of the Fairchild Channel F began the second generation of console gaming<sup>11</sup>. Second-generation games used general computers capable of running software from memory rather than hardwired game logic, allowing the use of ROM cartridges to run as many different games as creative programmers could make. This separation of consoles and games, in

www.lib.umich.edu/online-exhibits/exhibits/show/cvga-disassembled.

<sup>&</sup>lt;sup>5</sup> Waldron, Valerie. "CVGA Disassembled." Omeka RSS, www.lib.umich.edu/online-exhibits/exhibits/show/cvga-disassembled.

<sup>&</sup>lt;sup>6</sup> Donovan, Tristan. Replay: The History of Video Games. Yellow Ant Media, 2010. p.20.

<sup>&</sup>lt;sup>7</sup> ibid., pp. 23-25.

<sup>8</sup> ibid., pp. 76, 79, 86, 99-100.

<sup>&</sup>lt;sup>9</sup> Donovan, Tristan. Replay: The History of Video Games. Yellow Ant Media, 2010. pp. 21-22.

<sup>&</sup>lt;sup>10</sup> Waldron, Valerie. "CVGA Disassembled." Omeka RSS,

<sup>&</sup>lt;sup>11</sup> ibid.,p. 65.

addition to general improvements in hardware, brought much more complex and creative games to home consoles.

#### Atari Vs. Mattel

The two best-selling consoles in the second generation were the Atari 2600 and the Intellivison<sup>12</sup>. As they are direct competitors, comparing and contrasting the two consoles is the best way to put information about the Intellivision into context. The Atari 2600 was released in 1977 with an introductory price of \$199 USD<sup>13</sup>, while the Intellivision was released in 1979 with an introductory price of \$299 USD<sup>14</sup>.

#### Hardware

The Intellivision and the Atari 2600 differ greatly in many aspects of their hardware which are difficult to compare. For example, the Atari 2600 can theoretically draw more sprites to the screen at one time than the Intellivision, but in practice this is rarely the case. This is because the Intellivision has a chip separate from the CPU controlling video output, resulting in increased video quality but less programmer control<sup>15</sup>. The 2600 has no such chip, theoretically allowing programmers to create more complex visual displays that leave little to no computing power to the rest of the game<sup>16</sup>.

However, as a general indicator of their ability to process and store complex information, their CPUs and RAM are more able to be directly compared. Also of note is the complexity of their controller input.

Table 1. Comparison of basic hardware, Atari 2600 vs Intellivision.

	Atari 2600 <sup>17</sup>	Intellivision <sup>18</sup>	
СРИ	8-bit, 1.19 MHz	16-bit, 895 Hz	
RAM	128 bytes	1436 bytes	
Controller	8 directions, 1 button	16 directions, 15 buttons	
Introductory Price	\$199 USD	\$299 USD	

Table 1. Comparison of basic hardware, Atari 2600 vs Intellivision.

<sup>13</sup> ibid., p. 68

<sup>&</sup>lt;sup>12</sup> ibid., p. 89

<sup>&</sup>lt;sup>14</sup> "Blue Sky Rangers Intellivision History." Blue Sky Rangers Intellivision History, Blue Sky Rangers, www.history.blueskyrangers.com.

<sup>&</sup>lt;sup>15</sup> "Master Component." Blue Sky Rangers Intellivision History, history, blueskyrangers, com/hardware/2609.html.

<sup>&</sup>lt;sup>16</sup> Boris, Dan L. "System Specs." Atari 2600 Tech Page, www.atarihq.com/danb/a2600.shtml.

<sup>&</sup>lt;sup>17</sup> ibid.

<sup>&</sup>lt;sup>18</sup> "Master Component." Blue Sky Rangers Intellivision History, history.blueskyrangers.com/hardware/2609.html.

While the Atari 2600 has a faster processor, the Intellivision is the first 16-bit console, has significantly more RAM, and has a controller with more complex hardware. The more expensive hardware of the Intellivision led the console to be 50% more expensive, however.

When it came time to build upon their consoles, Atari released the Atari 5200, a more expensive product with superior hardware to compete with the Intellivision<sup>19</sup>, while Mattel Electronics released the Intellivision II, a cheaper product with the ability to play Atari 2600 games using an additional component known as the System Changer<sup>20</sup>.

# Marketing and Game Production

When the Intellivision was first released in 1979, the Atari 2600 had a significant head start. Mattel decided to capitalize on its technical advantages over the 2600 by building an advertising campaign showing the Intellivision's superior graphics compared to the 2600<sup>21</sup>. Mattel also secured licensing with many sports leagues such as the NHL, NBA, and NFL to create official-feeling "sports network" games and boost sales in order to catch up to Atari<sup>22</sup>. Atari's response was to license popular arcade games, starting with Space Invaders, and release ports for the Atari 2600<sup>23</sup>. Atari sold millions of units of Space Invaders, Pac-Man, Asteroids, and Frogger, making it nearly impossible for Mattel to catch up<sup>24</sup>. Mattel later licensed those same games and made their own ports; this effectively cemented these simple arcade games as valuable game franchises.

## Video Game Crash and Downfall of Mattel Electronics

### Video Game Crash of 1983

The home video game industry underwent an aggressive recession in 1983. While there are many factors that led to this crash, a market flooded with third-party games was a major cause<sup>25</sup>. Many companies tried to recreate the success of Activision, a game development company started by former Atari programmers<sup>26</sup>, and the result was a home console game market spread between tens of development companies. As companies were forced to shut down, millions of unsold cartridges were sold off at low prices. This forced more companies to lower their prices, transforming the market into one of underpriced games, many of low quality.

Another factor influencing the video game crash of 1983 was America's overall economy. Unemployment at the end of of 1982 exceeded 10%, which has happened in no other year since

<sup>&</sup>lt;sup>19</sup> Donovan, Tristan. Replay: The History of Video Games. Yellow Ant Media, 2010. pp. 99-100.

<sup>&</sup>lt;sup>20</sup> "Blue Sky Rangers Intellivision History." Blue Sky Rangers Intellivision History, Blue Sky Rangers, www.history.blueskyrangers.com.

<sup>&</sup>lt;sup>21</sup> "Legacy." Intellivision Entertainment, <u>www.intellivisionamico.com/legacy</u>.

<sup>&</sup>lt;sup>22</sup> ibid.

<sup>&</sup>lt;sup>23</sup> Donovan, Tristan. Replay: The History of Video Games. Yellow Ant Media, 2010. p. 79.

<sup>&</sup>lt;sup>24</sup> ibid., p. 79; Buchanan, Levi. "Top 10 Best-Selling Atari 2600 Games." IGN, IGN, 14 June 2012, www.ign.com/articles/2008/08/26/top-10-best-selling-atari-2600-games.

<sup>&</sup>lt;sup>25</sup> Donovan, Tristan. Replay: The History of Video Games. Yellow Ant Media, 2010. pp. 98-99.

<sup>&</sup>lt;sup>26</sup> ibid., pp. 89-90.

the Great Depression<sup>27</sup>. This made the ultra-cheap cartridges sold off by shuttered companies attractive to consumers; other consumers may have simply stopped buying video games entirely.

## Intellivision Post-Mattel Electronics - INTV Corp

In 1983, Mattel Electronics employed multiple strategies in an attempt to survive the crash. They reduced the price of their Intellivision II from \$150 to just \$69, cancelled development of their new hardware, and laid off most of their programmers<sup>28</sup>. Mattel Electronics ended 1983 with \$300 million in losses, and Mattel closed the division the following year.

The rights to the Intellivision and its games were sold to a former Mattel Electronics marketing executive under a separate company, INTV Corp. <sup>29</sup> INTV Corp. continued to produce and sell consoles and games until 1991.

#### Future of Intellivision - Intellivision Lives! and Intellivision Amico

In 1997, another group of former Intellivision programmers formed Intellivision Productions and obtained the rights to the Intellivision and its games<sup>30</sup>. They released free emulated versions of several Intellivision games on the web that year, following it up with two more collections: Intellivision Lives! in 1998 and Intellivision Rocks in 2001<sup>31</sup>.

In 2018, the Intellivision trademark and intellectual property was transferred to Intellivision Entertainment<sup>32</sup>. Intellivision Entertainment is developing a new console, the Intellivision Amico, along with a number of games to be made available for digital download<sup>33</sup>. The Amico has an announced release date of October 10th, 2020.

<sup>&</sup>lt;sup>27</sup> Amadeo, Kimberly. "Compare Today's Unemployment with the Past." The Balance, 7 Feb. 2020, www.thebalance.com/unemployment-rate-by-year-3305506.

<sup>&</sup>lt;sup>28</sup> "Blue Sky Rangers Intellivision History." Blue Sky Rangers Intellivision History, Blue Sky Rangers, www.history.blueskyrangers.com.

<sup>&</sup>lt;sup>29</sup> ibid.

<sup>30</sup> ibid.

<sup>31</sup> ibid.

<sup>&</sup>lt;sup>32</sup> Roney, Steve. "Intellivision Productions, Blue Sky Rangers and Intellivision Entertainment." AtariAge Forums, 26 Nov. 2019.

atariage.com/forums/topic/285395-intellivision-productions-blue-sky-rangers-and-intellivision-entertainment/.

<sup>&</sup>lt;sup>33</sup> "Intellivision Entertainment." Intellivision Entertainment, <u>www.intellivisionamico.com/</u>.

# 3 - Methods

This project aims to make the Intellivision collection more useful, accessible, and extendable, with each of the project's objectives supporting this goal in a different and important way. In order for the collection to be accessible, it has to be organized into a station with detailed instructions on its use. To maximize the collection's usefulness, it needs supporting documentation detailing the materials it contains, their condition, and information on how to preserve their condition through proper maintenance. For the collection's growth, research needed to be done into other Intellivision-related items and how to evaluate them for accession. Additionally, to promote the Interactive Media Archive and inform WPI students about the Intellivision's place in video game history, the goal of creating an interactive exhibit was created. Thus the project was divided into the following objectives:

- 1. Organize Intellivision materials and peripherals for future use and create a guide to using the archive's Intellivision.
- 2. Take stock of current Intellivision resources and document protocols for their care and maintenance.
- 3. Research significant games or accessories for the Intellivision and create a prioritized accession guide for expanding the collection in the future.
- 4. Create an interactive exhibit that displays Intellivision items along with informative description labels and allows people to play noteworthy Intellivision games.

# **Station Setup and Use Guide**

In order to create a usable and accessible station from the Intellivision materials in the archive, I needed to identify and assemble the items required to make the Intellivision function, then learn how to operate this collection of materials. This enabled me to create a self-contained station for the Intellivision and create a guide on using this station for future use by others.

Information on setting up the Intellivision was provided by the Master Component Owner's Manual which was stored with the console in the archive prior to this project. The manual indicated that both audio and video output are delivered through a single co-axial cable with what I observed to be an RCA plug. A CRT television was provided by Arthur Carlson, the Assistant Director for Archives and Special Collections. This television had an F-type connector socket used for cable television input; an adapter allowing the Intellivision's RCA cable to connect to this socket was requested and provided. This television and adapter are sufficient to operate the Intellivision. The television, adapter, Intellivision Master Component, and a box

containing Intellivision cartridges were placed on a rolling cart to create a portable and self-contained Intellivision station. The information I gained from the Owner's Manual and through experimentation was used to write the Use Guide in <u>Appendix A</u>.

# **Inventory and Maintenance Guide**

In order to work with the Intellivision materials in the archive, I needed to assess the archive's current collection, learn how to properly maintain Intellivision materials, and learn how to restore the function of materials that were broken or unusable. In addition to using this information to work with the Intellivision collection for the duration of the project, it was important to document these processes and results for the future use of others.

Creating a detailed inventory of the Intellivision games in the archive required the identification of relevant information to record about these games as well as techniques for gaining this information. A "mint condition" Intellivision game consists of a box containing a cartridge, a manual, and two controller overlays. Therefore, I recorded for each game which of these components are included as well as their condition. Many of the controller overlays were in poor condition or very fragile; due to the nature of their use, they tend to scrape over time. To prevent further degradation of these overlays, they were put in protective sleeves before use. I then tested each game cartridge to see if it ran; the games which were unable to run were later cleaned (instructions in Appendix C) and re-tested. I also found it pertinent to read the manuals of each game to learn the number of players required and record this information. I accessed instructions online for games without physical manuals<sup>34</sup>. Finally, I wanted to record for games with multiple release versions which version was in the archive. Surprisingly, the simplest way to identify versions was by testing easter eggs, as games released multiple times were often programmed with different easter eggs on each release<sup>35</sup>.

In order to learn about the maintenance and cleaning of the Intellivision and its games, I submitted a research inquiry to the Strong National Museum of Play, a museum which has an extensive collection of materials related to the Intellivision<sup>36</sup>. I received a response from Director of Conservation Hillary Ellis detailing care, maintenance, storage, and cleaning processes which were used to create a maintenance and cleaning guide (Appendix C).

#### **Accession Guide**

In order to aid the future expansion of the archive's Intellivision collection, I created a reference document that could be used to quickly evaluate games and peripherals for acquisition. For each cartridge and peripheral released for the Intellivision, I needed to identify the item's financial value, notable features, and value to the collection. There have only been 125 games officially released for the Intellivision, making it possible for a one-person team to

<sup>&</sup>lt;sup>34</sup> "Intellivision Game List." Blue Sky Rangers Intellivision History, Blue Sky Rangers, www.history.blueskyrangers.com/game-list.html. Accessed 3 Feb. 2020.

<sup>35 &</sup>quot;Digital Press Easter Eggs." Digital Press HQ, www.digitpress.com/easteregs/intellivision.htm.

<sup>&</sup>lt;sup>36</sup> Boellstorff, Tom, and Braxton Soderman. "Intellivision in the Archive." Intellivision in the Archive | The Strong, 31 July 2019, www.museumofplay.org/blog/2019/07/intellivision-in-the-archive.

research each one individually. Additionally, I needed to create a document for use by archivists upon receipt of new materials to integrate them into the collection.

In order to get pricing information for each Intellivision game and peripheral, I consulted the price-listing website pricecharting.com<sup>37</sup>. This website uses algorithms which scan online video game listings to collect pricing data on various video games separated by "loose item" sales, "closed in box" sales, and "new" sales<sup>38</sup>. Recording these prices for the accession reference document enables archivists to evaluate any potential addition to the collection and see if they're getting a good deal.

In addition to pricing information, I needed to know how valuable each item would be to the collection. This value is based on the item's historical significance as well as the collection's current inventory - for example, the Intellivoice Voice Synthesis Module is much more valuable to a collection containing compatible games, and those games become more valuable with the addition of the module. The website for Intellivision Lives!, a compilation of Intellivision games with software to emulate the Intellivision on personal computers, had a list of all 125 Intellivision games along with information about each game and digital copies of game manuals and control overlays. This page no longer exists as the website now redirects to the website of the Blue Sky Rangers (a group of former Intellivision programmers at Mattel Electronics). The Blue Sky Rangers website has a similar list of games with information but no attached overlays and manuals<sup>39</sup>; however, I accessed these pages using archive.org and saved directories of manuals and overlays<sup>40</sup>. While this was a meaningful starting point, I also individually researched each game for notable stories or features. Using this information, I was able to score each game on a scale from 1 to 5, where 1 represents a highly desired item and 5 represents an item of little significance. This rating system was used in a previous video game archive project and its reuse is meant to provide consistency<sup>41</sup>.

The accession guide that resulted from this research (Appendices  $\underline{D}$  and  $\underline{E}$ ) allows archivists to evaluate any possible addition to the collection quite quickly. However, the guide may eventually need to be updated as the rating of an item depends partially on the state of the current collection. If the collection expands significantly, items will need to be re-evaluated, and pricing trends are also subject to change over time.

<sup>&</sup>lt;sup>37</sup> "Intellivision Prices & Intelli Game List." PriceCharting, <u>www.pricecharting.com/console/intellivision</u>. Accessed 3 Feb. 2020.

<sup>&</sup>lt;sup>38</sup> "FAQ and Help for PriceCharting." PriceCharting, <u>www.pricecharting.com/faq</u>.

<sup>&</sup>lt;sup>39</sup> "Intellivision Game List." Blue Sky Rangers Intellivision History, Blue Sky Rangers, www.history.blueskyrangers.com/game-list.html. Accessed 3 Feb. 2020.

<sup>&</sup>lt;sup>40</sup> "Intellivision Software". Intellivision Lives!.

http://intellivisionlives.com/bluesky/games/credits.shtml. Archived 25 December 2019 at http://web.archive.org/web/20181225134511/http://intellivisionlives.com/bluesky/games/credits.shtml. Accessed 6 April 2020.

<sup>&</sup>lt;sup>41</sup> Kreiselman, J., Peters, R., & Sargent, A. (2019). WPI's Gordon Library Video Game Archive and Use Pertaining to the Nintendo Entertainment System (Undergraduate Interactive Qualifying Project No. E-project-022519-233041). Retrieved from Worcester Polytechnic Institute Electronic Projects Collection: https://web.wpi.edu/Pubs/E-project/Available/E-project-022519-233041/

#### **Interactive Exhibit**

At the start of this project, I had also planned to create an interactive exhibit focusing on an aspect of the Intellivision with the intent to inform and engage WPI students. The theme I selected was "Intellivision - Innovations in the Second Generation of Consoles" and was meant to include both physical items and printed marketing materials arranged along a timeline. Examples of display items are boxes and cartridges of arcade game ports, a printed flier for PlayCable, and groundbreaking games such as Utopia. To further engage students, a selection of games would be hosted as tournaments, giving people first-hand experience with an Intellivision and games from the late 1970s and early 1980s.

This exhibit was scheduled to go for three days in late March. Unfortunately, however, the global outbreak of COVID-19 caused the WPI administration to move classes off-campus for the remainder of the academic year. As a result, all on-campus events were canceled, including the exhibit.

### 4 - Conclusion and recommendations

While the project did not meet its goal of "showing off" the Intellivision with an exhibit, the establishment of the station and its protocols was successfully completed. Such an exhibit would certainly generate interest in the Intellivision collection and would be worthwhile if someone had an interest in putting one on in the future, but there are other ways to publicize the collection with less effort. My personal recommendation for this is to work with the instructor of an IMGD course to integrate the Intellivision station into a lecture or even a small project.

One way to increase the collection's future utility is to fabricate overlays and manuals for games, either in preparation for a particular activity or proactively. Digital versions of Intellivision overlays and manuals can be found on Google Drive<sup>42</sup> and printed. Similarly, it may be valuable to test the function of certain games periodically, especially cartridges which have begun to show corrosion, either in anticipation of an event or activity or simply to keep an updated inventory. Additionally, most controller overlays are currently unsleeved in the collection because they weren't used when testing their games to preserve their quality. I recommend sleeving these overlays once the WPI campus becomes accessible again.

Now that all Intellivision games have been researched and given accession ratings, an effort can be made to add new items to the collection. Acquiring games determined to be of high importance will increase the collection's educational and research value; there are several items with accession ratings of 1 through 3 which currently have resale prices around ten dollars. Additionally, an effort should be made to acquire an Intellivoice Voice Synthesis Module to enable Intellivoices games (one of which is currently in the collection) to be played.

While I have no further recommendations for the collection as it currently stands, it's important to recognize that the relevance and value of these games are not unchanging, even after 40 years. If the collection expands significantly with new acquisitions, the value that unowned items have to the archive will change as a result. If a new game is released in an old franchise, the historical value of older games fundamentally changes. If, in the case of the Intellivision, a 40-year-old console gets a spiritual successor, the resale value of the original's games may be driven up by nostalgic consumers and collectors. The notes I collected for Appendix E will eventually need to be re-evaluated to reflect these changes. To briefly summarize all recommendations:

- Spread awareness of this new resource by working with IMGD educators to make use of the Intellivision collection.
- Fabricate overlays and manuals from digital sources for games currently in the collection which are missing these items.
- Properly store all Intellivision materials, particularly overlays, in ways consistent with maintenance and accession guidelines (Appendices C and D) when the WPI campus is accessible
- Expand the Intellivision collection with games and hardware that will increase the collection's value to researchers and educators.

<sup>42</sup> https://drive.google.com/drive/folders/1mh-20BnCi-PbIHOw0R73yttZLqBBBa90

•	Update the Accession Rating Guide ( <u>Appendix E</u> ) in the future to reflect changes that will occur.

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# **APPENDIX A: Access and operation**

# **Setting up the Station**

- 1) Retrieve the Intellivision cart from the archive. It should have a television on its top shelf and two boxes one containing the console and another containing game materials on its lower shelves. Make sure no cords are dangling from the cart the television's power cable can be gently coiled around the television to prevent this, and all other cables should be tucked into the box containing the Intellivision console.
- 2) Roll the cart to a location close to two outlets. Note that when the Intellivision is being used, there will be a series of wires and components from the outlet to the Intellivision controller. Therefore, it should be set up where no foot traffic passes between the user(s) and the outlet.
- 3) Plug the television's power cable into the outlet.
- 4) Remove the Intellivision console from its box. While you can put the console on a shelf of the cart, it's best to place it on a table you will be sitting at while using the Intellivision. This is for easy access to the console and its cartridge port as well as ensuring the controller cables aren't stretched.
- 5) The Intellivision will have two cables coming out of it, not including the two coiled cables connecting to its controllers: one cable with a power outlet, and another with audio/video output.
- 6) Plug the Intellivision's power cable into an outlet.
- 7) The Intellivision's audio/video output cable ends in an RCA plug at the time of writing, the station's television accepts F-Type coaxial input and an adapter is attached to this cable.

  Using the already-attached adapter, connect the cable to the television's coaxial port.
- 8) Power on the television and set it to channel 3 or channel 4 there is a switch on the underside of the Intellivision console if you need it to be one or the other.
- 9) Insert a cartridge known to be in a good working condition (<u>Appendix B</u>) to ensure everything works if a game menu does not display, first ensure that the TV is powered, then ensure that the Intellivision is powered, then try switching from channel 3 to 4 on the TV or vice versa, and finally ensure the Intellivision is properly connected to the television.

# **Using the Intellivision**

- 1) To play an Intellivision cartridge, retrieve the game from the box of game materials. Consult the inventory (<u>Appendix B</u>) to see what should be included box, manual, overlays and confirm that they are all together.
- 2) If the game includes overlays, ensure that they are sleeved for their protection before using them. If the game does not include overlays, consult the directory of digital game overlays<sup>43</sup> and familiarize yourself with the controls or make a copy of the overlay, depending on your needs. Once the overlays are properly protected, slide them onto the buttons of the Intellivision's controller or controllers.
- 3) If you find that any information regarding the game differs from the inventory (<u>Appendix B</u>), update the inventory to reflect this new information.
- 4) If the cartridge does not run, attempt to restore its function using the instructions in Appendix C.

# **Returning the Station**

- 1) Remove the cartridge from the Intellivision and the overlays from the controller or controllers, if using. Return these to the place from which they were retrieved.
- 2) Return the controller or controllers to the Intellivision, ensuring that they slide in neatly without dangling wires.
- 3) Put away any other cartridges and game materials and return them to the cart.
- 4) Power off the television and unplug it from the outlet, returning the power cable to the cart without allowing it to dangle by looping it around the base of the television.
- 5) Unplug the Intellivision from the outlet and the television, returning these cables and the Intellivision itself to its box. Close this box and return it to the cart.
- 6) Return the Intellivision cart to the archive, to the location where it was originally retrieved or as otherwise directed.

21

<sup>43</sup> https://drive.google.com/drive/folders/1mh-20BnCi-PbIHOw0R73yttZLqBBBa90

# **APPENDIX B: CURRENT INVENTORY**

Game	Condition	Manual?	Box?	Control Overlays?	1 Player, 2, both?	Notes
Lock 'n' Chase	Does not run	Yes	Yes	Yes	1-2 (Hotseat)	
Burgertime	Working	Yes (two!)	Yes	Yes (3)	1-2 Players	2 overlays came in box and 2 out of box
Frogger	Working	Yes	Yes	No	1-2 Players	
Frog Bog	Working	Yes	No	Yes	1-2 Players	
Poker & Blackjack	Working	Yes	No	No	1-2 Players	
Utopia	Working	Yes	No	Yes (3)	1-2 Players	
Auto Racing	Working	No	No	No	1-2 Players	This is the later cartridge version with updated steering
Skiing	Working	Yes	Yes	Yes	1-6 Players (hotseat)	
Sea Battle	Working	Yes	Yes	Yes (4)	2 Players	
Triple Action	Working	No	Yes	No	2 Players	
Boxing	Working	Yes	Yes	Yes	2 Players	
Armor Battle	Working	No	No	No	2 Players	Older version of game with slower tank rotation.
Football	Working	No	No	No	2 Players	Only works if inserted at an angle (further in on the left)
Major League Baseball	Working	No	No	No	2 Players	
Sub Hunt	Working	Yes	Yes	Yes	Singleplay er	One overlay in box, one outside
Advanced Dungeons & Dragons	Working	Yes	Yes	Yes	Singleplay er	Extremely finicky with insertion angle
Night Stalker	Working	Yes	Yes	Yes	Singleplay er	Finicky with insertion angle

Star Strike	Working	Yes	Yes	Yes	Singleplay er	Both overlays outside of box
Bomb Squad	Runs but not playable without voice	Yes	Yes	Yes	Singleplay er	Requires Intellivoice (voice synthesis module)
Space Armada	Working	Yes	Yes	Yes	Singleplay er	Had an Intellivision manual tucked inside!
Pitfall!	Working	No	Yes	Yes	Singleplay er	
Astrosmash	Working	No	Yes	Yes	Singleplay er	Must be inserted very firmly to work as the front of the contacts seems degraded.

# APPENDIX C: Intellivision Maintenance and Cleaning

#### **General Maintenance**

Though you may want to test the cartridges in the archive on occasion, especially if planning to use one, the best way to maintain their quality is to abstain from cleaning procedures unless necessary. Only move on to the following cleaning instructions if the console, its components, or its cartridges aren't working.

Remember also that it is very important for maintaining the quality of overlays that they are stored and handled in a way that they are not bent or scraped. Store all original overlays in protective sleeves cut to the size of the overlay; they can be used while in these sleeves and should not be removed for any reason.

# **Upon Failure of a Cartridge**

If a cartridge you are testing does not work, you first want to find out where the problem lies. Ensure that the Intellivision and display are powered on and hooked up according to the access document. In particular, ensure that the channel switch on the underside of the Intellivision matches the display channel set by your television or display. Once this has been confirmed, try one or two cartridges known to work to identify whether the failure lies in the cartridge or the Intellivision. If using a module such as the Intellivoice, try other Intellivoice cartridges as well to determine whether the base component, cartridge, or accessory component are the point of failure.

# **Cleaning a Non-Functional Cartridge**

If a cartridge is not working with the Intellivision, try the following three steps, which are ordered from least to most invasive, time-consuming, and possibly damaging to the cartridge. After each step, try the cartridge once more. Hopefully, Step 1 will be enough.

# Cleaning with Compressed Air

Take a canister of compressed air and insert its nozzle if one is not in place. Keeping the canister completely upright, blow air into the opening of the cartridge, moving and rotating the cartridge to blow dust and debris from all areas. Never shake the canister of compressed air, blow into a cartridge when the canister is not upright, or blow air from your mouth into a cartridge. A small burst has been enough to restore most games to function, so you may want to test after a light application of compressed air before coming back to this step and blowing air more thoroughly.

# Cleaning with Alcohol

Dip a cotton swab in isopropyl alcohol (70% or above, a higher concentration is better) and insert it into the cartridge opening, making sure to clean both the plastic walls and back of the

cartridge as well as the metal contacts. Wait for the cartridge to dry completely before using (this will take longer with a lower concentration of isopropyl alcohol). A more sophisticated alcohol applicator such as a foam paintbrush may be desired for efficiency, but cotton swabs are fine for this purpose as the lack of sharp edges in an Intellivision cartridge means little to no risk of depositing cotton lint in the cartridge. Note: Keep alcohol away from any stickers, labels, or ink.

# Cleaning by Abrasion

Warning! Only use this method if no other methods work and there is visible corrosion on the cartridge's contacts.

This approach attempts to fix cartridge contacts that are failing due to a layer of corrosion or stubborn deposited matter on the contacts. A rubber eraser is a great way to gently rub off light corrosion or grime, and poses little risk to the cartridge. If this isn't enough, move up to using very fine sandpaper (ideally 600 grit or higher, no lower than 200). You'll likely need to open up the cartridge to get to the pins that need attention; do not use sandpaper on undamaged pins and make sure you're only sanding the contacts. Finally, clean with compressed air followed by alcohol to ensure that any particles removed from the contacts do not remain in the cartridge.

# APPENDIX D: Intellivision Accession Guide

Upon receipt of an Intellivision game, first check the Intellivision collection inventory to see if the game already exists. If it does, group the items together and update the inventory to reflect items which are duplicates. If it is a new game, add it to the inventory noting the items that you have.

After updating the inventory, note what it's missing from the following and act accordingly:

- One box
- One cartridge
- One manual
- Two controller overlays

**Box:** If the game is missing a box or is not in its original box (e.g. in a shoebox), put the remaining materials in a labeled archival box of the appropriate size for the materials. If the game has its original box, materials can be stored inside, but the box may be too flimsy to protect its contents (and itself) when stacked beneath other boxes or moved around. Do not stack games in their original boxes; if you wish to conserve space by stacking, place these boxes in their own more durable boxes.

**Cartridge:** The cartridge should be used to identify a game; if it came packaged with materials for a different game, treat those materials as a separate game without a cartridge. If there is no cartridge, store the materials in a sealed or labeled box or bag if the game's box is not included; if the game's box is included, store all game materials in this box as above. If the cartridge's label is missing or unrecognizable, test the cartridge per the use guide (Appendix A) to identify the game, then store the cartridge in a labeled plastic bag to ensure it can be identified.

If the game is missing a manual: Consult the directory of digital game manuals<sup>44</sup> and see if the manual for this game is included. If it is, you can refer to it in digital form or print it out if necessary. If the manual is not in the directory, you may wish to search for it online; update the directory if you find it.

**Controller overlays:** Inserting a controller overlay into a controller can degrade the overlay. Use thin and transparent card sleeves, cut down to the size of the overlay, to protect the overlay during use and storage. If the overlays are missing, consult the directory of digital game overlays and see if the overlay for this game is included. If it is, print it out and cut it to the proper size to be used as an overlay. If the overlay is not in the directory, you may wish to search for it online; update the directory if you find it.

If one overlay is in good condition but the other is missing or significantly decayed, you may also wish to create a copy if the game allows both controllers to be used. If the overlay is not in the directory of digital game overlays, scan the overlay in good condition and add it to the directory.

<sup>44</sup> https://drive.google.com/drive/folders/1mh-20BnCi-PbIHOw0R73yttZLqBBBa90

<sup>45</sup> https://drive.google.com/drive/folders/1mh-20BnCi-PbIHOw0R73yttZLqBBBa90

After familiarizing yourself with the materials and instructions of the game and preparing the controller overlays, test the game per the use guide (Appendix A) and reflect its condition in the game's inventory entry.

# APPENDIX E: Accession Rating Guide - Notes on Every Intellivision Game

Title	Relea se Year	Network	Publisher	In Archive?	Cost	Access ion Rating	Notes
Auto Racing	1980	Sports	Mattel Electronics	Yes	\$3.00-7.00	4	Two versions exist; the original release had steering toward a direction on the screen while the revised version has steering relative to the car's orientation. The game's packaging does not indicate which version it is, but the "realistic" steering can be enabled on the origininal release version by holding 1+6+9 on the controller during startup. Source: https://web.archive.org/web/20161104142129/https://beta.groups.yah oo.com/neo/groups/int vprog/conversations/m essages/215
Boxing	1981	Sports	Mattel Electronics	Yes, Working	\$2.50-6.50	4	
Major League Baseball	1980	Sports	Mattel Electronics	Yes	\$3.00-5.00	2	The only Intellivision game to synthesize speech using the sound chip. With the release of the Intellivoice, ME's Marketing department banned future use of speech without requiring the Intellivoice.
NASL Soccer	1980	Sports	Mattel Electronics		\$5.00-10.0 0	4	Also released as "Soccer" due to licensing restrictions.
NBA Basketball	1980	Sports	Mattel Electronics		\$5.50-6.00	4	Also released as "Basketball" due to licensing restrictions.

NFL Football	1980	Sports	Mattel Electronics	Yes	\$5.00-7.00	4	Also released as "Football due to licensing restrictions.
NHL Hockey	1980	Sports	Mattel Electronics		\$6.00-7.00	4	Also released as "Hockey" due to licensing restrictions.
PBA Bowling	1981	Sports	Mattel Electronics		\$2.50-7.50	4	Also released as "Bowling" due to licensing restrictions. First Intellivision game programmed by Mattel employees.
PGA Golf	1980	Sports	Mattel Electronics		\$4.50-10.5 0	4	Also released as "Golf" due to licensing restrictions.
Tennis		Sports	Mattel Electronics		\$4.50-7.00	4	
U.S. Ski Team Skiing	1980	Sports	Mattel Electronics	Yes	\$4.00-7.00	4	Also released as "Skiing" due to licensing restrictions.
ADVANCE D DUNGEON S & DRAGONS	1982	Action	Mattel Electronics	Yes	\$5.50 <b>-1</b> 2.5	5	Full title is technically "ADVANCED DUNGEONS & DRAGONS Cartridge" for legal reasons, renamed to "ADVANCED DUNGEONS & DRAGONS Cloudy Mountain Cartridge" when the sequel released. Re-released as "Adventure" and "Crown of Kings" for licensing reasons. First cartridge to go over 4K in size.
Armor Battle	1979	Action	Mattel Electronics	Yes	\$4.50-5.00	3	was one of the original four games introduced with Intellivision when it was test marketed in 1979. Production name was "Tanks-A-Lot"
Dattic	1919	, cuon	Matter Electronics	Yes,	Ψ4.00-0.00	<u> </u>	TUTING A LUI
Frog Bog	1982	Action	Mattel Electronics	Working	\$3.00-9.50	5	
Lock 'N Chase	1982	Action	Mattel Electronics	Yes	\$4.00-6.00	2	Ported from an arcade game Pac-Man clone.
Night Stalker	1982	Action	Mattel Electronics	Yes	\$5.00-6.50	5	
-							

Sea Battle	1980	Action	Mattel Electronics	Yes	\$5.00-6.50	5	
Shark! Shark!	1982	Action	Mattel Electronics		\$10.00-23. 00	1	One of the best-reviewed Intellivision games ever; "A must cartridge for Intellivision owners"
Sharp Shot	1982	Action	Mattel Electronics		\$4.00-7.00	4	Collection of simple games originally developed for the interactive TV show "Powww"
Snafu	1981	Action	Mattel Electronics		\$5.00-6.00	5	
Sub Hunt	1982	Action	Mattel Electronics	Yes	\$4.00-6.00	5	
Triple Action	1981	Action	Mattel Electronics	Yes	\$3.00-6.00	2	Originally developed as a collection of 6 Atari 2600 game clones. Was reduced to 5 games due to space considerations and again to 3 when Mattel lawyers requested that their Pong clone and their Breakout clone be dropped.
Tron: Deadly Discs	1982	Action	Mattel Electronics		\$5.00-10.5 0	4	The game was produced at the same time as the Disney movie TRON, using storyboards from the film to guide development.
Tron: Maze-a-Tro n	1982	Action	Mattel Electronics		\$4.50-8.50		Like Deadly Discs, made in parallel with the production of the Disnet movie TRON
Astrosmash	1981	Space Action	Mattel Electronics	Yes	\$4.50-5.50	3	Started as a Asteroids clone called Meteor! A variation called Avalanche was also developed on the cartridge and, to avoid a lawsuit, the game was locked to play only this variant version. The original Asteroids clone code is still on the cartridge and a glitched startup can execute the

							original code. This unused code was reused for the game Space Hawk. Self-correcting difficulty setting - game gets harder over time but eases up when player loses lives.
Space Armada	1981	Space Action	Mattel Electronics	Yes	\$3.50-5.00	3	Clone of the arcade game Space Invaders.
Space Battle	1980	Space Action	Mattel Electronics		\$4.00-5.50	4	Consumers complained that the game was too easy. A more difficult version was released soon after.
Space Hawk	1982	Space Action	Mattel Electronics		\$4.00-6.50	4	The development of this game led to the discovery of a controller encoding issue - pressing a side button at the same time as particular disc directions would instead encode a numeric keypress. This led to a bug wherein "hyperspace" would initiate at random, which was explained away as a feature ("black holes") in the game's manual.
Star Strike	1981	Space Action	Mattel Electronics	Yes, Working	\$3.00-5.00	5	
ABPA Backgamm on	1979	Strategy	Mattel Electronics		\$3.50-12.0 0	4	was one of the original four games introduced with Intellivision when it was test marketed in 1979. The program code was recycled in the Triple Challenge cartridge released by INTV Corporation.
Checkers	1980	Strategy	Mattel Electronics		\$3.50-9.00	4	Checkers vs. a computer with two skill levels (also can recommend a move to the player).

Reversi	1982	Strategy	Mattel Electronics		\$4.50-6.50	4	Video game version of the board game Reversi. The board game is trademarked under the name Othello; Atari licensed the name for its video game version, but Mattel instead used the older name which had no trademark.
USCF Chess	1982	Strategy	Mattel Electronics		\$8.00-18.5 0	4	Also released as "Chess" due to licensing restrictions. At the highest difficulty, the computer's move could take hours. Luckily, a feature was included to allow switching difficulty in the middle of a move.
Utopia	1982	Strategy	Mattel Electronics	Yes	\$4.50-9.00	1	Original Intellivision game, later ported to Aquarius. Sometimes referred to as "Civilization 0.5", Utopia is considered to be the first (or among the first) city-building game, god game, and/or real-time strategy game.
Horse Racing	1980	Gaming	Mattel Electronics		\$4.50-8.00	5	
Las Vegas Poker & Blackjack	1979	Gaming	Mattel Electronics	Yes, Working	\$2.00-4.50	3	Most popular Intellivision game because it came with the Master Component from 1980 to 1982.
Las Vegas Roulette	1980	Gaming	Mattel Electronics		\$5.00-9.00	5	
Royal Dealer	1982	Gaming	Mattel Electronics		\$3.00-6.00	4	Contained a major bug that could crash the game. Shipped anyway, but led Mattel Electronics to heavily prioritize playtesting and QA as part of the development cycle from then on.

The Electric Company: Math Fun	1979	Children's Learning	Mattel Electronics		\$4.50-12.0 0	4	Was one of the original four games introduced with Intellivision when it was test marketed in 1979. Older versions of the game required numbers to be entered starting with the ones place; a newer version was made with left-to-right number entry.
The Electric Company: Word Fun	1980	Children's Learning	Mattel Electronics		\$4.50-10.0 0	4	Doesn't work on Intellivision II; Mattel offered to replace copies of Word Fun with any other Intellivision game. A group of kids exploited this by buying up cheap copies of Word Fun, exchanging them for higher-value games, and reselling them.
Vectron	1983	Arcade	Mattel Electronics		\$4.00-7.50	4	Designed to recreate the gameplay and feel of the vector-graphics arcade game Tempest using raster graphics, hence the name "Vectron".
B-17 Bomber	1982		Mattel Electronics		\$7.00-12.0 0	3	Intellivoice required. A foreign version was not recorded when the other Intellivoice games were due to content (dropping bombs on France, Germany, and Italy).
Bomb Squad	1982		Mattel Electronics	Yes, Working	\$6.00-10.0 0	3	Intellivoice required. Unsold copies distributed in Mexico, despite the Intellivoice never being sold in Mexico.
Space Spartans	1982		Mattel Electronics		\$3.00-8.00	3	First game to require the Intellivoice module
Tron: Solar Sailer	1983		Mattel Electronics		\$11.50-27. 00	3	Requires Intellivoice component. Mistakenly

					marketed as "Solar Sailor" - a "sailor" is a person while a "sailer" is a vehicle.
ADVANCE D DUNGEON S & DRAGONS : Treasure of Tarmin	1983	Mattel Electronics	\$9.50-15.0 0	4	Full title is technically "ADVANCED DUNGEONS & DRAGONS: Treasure of Tarmin Cartridge" for legal reasons. Re-released as "Minotaur" for licensing reasons.
Bump 'n' Jump	1983	Mattel Electronics	\$9.50-13.0 0	4	Arcade game port. Developed by two non-employees who made an Intellivision development system using a PlayCable unit and a computer. They were paid \$24,000 and were not on the game credits.
BurgerTime	1983	Mattel Electronics	 \$6.00-10.5 0	3	Arcade game port. First Intellivision game not released in a "network" (for example, all blue-bordered games released prior to this were in the Sports Network), although its maroon-bordered box indicates it was at one point made to be in the Arcade Network.
Buzz Bombers	1983	Mattel Electronics	\$10.00-10. 00	4	Similar to the arcade game Centipede. Tens of thousands of copies were packaged that said "1 or 2 can play", which had to be crossed out by hand with a marker. Link: https://atariage.com/for ums/topic/217272-which-buzz-bombers-version-is-rarer/
Kool-Aid Man	1983	Mattel Electronics	\$15.00-29. 00	3	Promotional game made with General Foods. GF liked the

					game and wanted a sequel.
Loco-Motio n	1983	Mattel Electronics	\$5.50-10.0 0	4	Activision's Happy Trails was extremely similar to Loco-Motion and released first, harming sales of Loco-Motion. This nearly came to a lawsuit by Mattel.
Masters of the					Graphics code written for the Intellivision III was used to provide higher-quality graphics than standard Intellivision games. The Marketing dept capitalized on this by calling it "SuperGraphics", a fairly meaningless term that was then added to later Intellivision games.  First Intellivision game
Universe: The Power of He-Man	1983	Mattel Electronics	\$14.00-27. 50	2	to have credits on packaging, future releases followed suit.
Mission X	1983	Mattel Electronics	\$5.00-11.0 0	4	Port of an arcade game. You play as a bomber plane from a top-down perspective.
Motocross	1983	Mattel Electronics	\$7.50-13.5 0	4	Announced as part of the Sports network, but "networks" were dropped before release. The algorithms developed were reused in many future games.
Pinball	1983	Mattel Electronics	\$8.50-21.0 0	3	Longest production time of any Intellivision game - over 2 years. Announced as part of the Action Network, but "networks" were dropped before release.
Beamrider	1983	Activision	\$20.00-24.		Later ported to Atari

				00		consoles. Awarded "Best Cartridge Game of the year" by Video Review magazine.
Happy Trails	1983	Activision		\$8.00-19.0 0		Designed/written by Carol Shaw, one of the first female game designers/game programmers.
Pitfall!	1982	Activision	Yes	\$4.00-10.0 0	2	Originally designed and released for the Atari 2600, the Intellivision version was released the same year.
River Raid	1983	Activision		\$29.00-59. 00	4	Another game designed by Carol Shaw.
Stampede	1982	Activision		\$6.00-10.0 0	5	
The Dreadnaug ht Factor	1983	Activision		\$17.00-23. 50		A hacked version to make the game harder was programmed by a Mattel Electronics programmer and enjoyed by ME programmers, but was of course never released to the public.
Worm Whomper	1983	Activision		\$31.00-64. 00		Original Intellivision game.
Centipede	1983	Atarisoft		\$12.50-20. 50		Port of the arcade game.
Defender	1983	Atarisoft		\$24.00-40. 00	5	
Pac-Man	1983	Atarisoft		\$17.50-33. 00		Licensed from Atari. Since Lock 'N' Chase, a Pac-Man clone, had already been made, Lock 'N' Chase's programmer Mike Winans ported Pack-Man as well.
Carnival	1982	Coleco		\$3.00-4.00		Port of the arcade game. Did not work with the Intellivision II, a fact which was prominently displayed on thir packaging.

Donkey Kong	1982	Coleco	\$4.00-8.50	3	Arcade game port. Doesn't work on Intellivision II. Universal Studios sued Nintendo and Coleco for ripping off King Kong; Nintendo fought and won the lawsuit.
Donkey Kong Jr.	1983	Coleco	\$10.50-29. 00	3	Arcade game port. Doesn't work on Intellivision II.
Lady Bug	1983	Coleco	\$7.50-32.0 0	5	
Mouse Trap	1982	Coleco	\$8.00-11.5 0	5	Doesn't work on Intellivision II.
Turbo	1983	Coleco	\$37.00-99. 00	5	
Venture	1983	Coleco	\$5.50-12.0 0	5	Port of the original arcade game. Doesn't work on Intellivision II.
Zaxxon	1983	Coleco	\$15.00-19. 50	5	
Atlantis	1982	Imagic	\$2.50-7.50	5	Ported from the original Atari 2600 version
Beauty & the Beast	1982	Imagic	\$3.00-6.50	4	Basic Donkey Kong clone. Intellivision only game.
Demon Attack	1982	Imagic	\$3.50-8.00	5	Ported from Atari 2600.
Dracula	1983	Imagic	\$14.00-37. 00	4	Intellivision exclusive. Unique gameplay.
Dragonfire	1982	Imagic	\$4.50-12.5 0	5	
Fathom	1983	Imagic	\$33.00-101 .00	5	
Ice Trek	1983	Imagic	\$12.50-18. 00	5	Original Intellivision game.
Microsurge on	1982	Imagic	\$5.00-12.0 0	4	
Nova Blast	1983	Imagic	\$7.00-13.0 0	5	Original Intellivision game.
Safecracke r	1983	Imagic	\$10.00-26. 00	5	Original Intellivision game.
Swords & Serpents	1982	Imagic	\$6.50-17.5 0	5	Original Intellivision game made by a

						programmer at Imagic who previously worked at Mattel Electronics.
Tropical Trouble	1982	Imagic		\$10.50-23. 50	5	Original Intellivision game.
Truckin'	1983	Imagic		\$16.50-28. 00	5	Original Intellivision game.
White Water!	1983	Imagic		\$13.50-28. 50	5	Original Intellivision game.
Blockade Runner	1983	Interphase Tech.		\$9.50-31.0 0	5	Atari 2600 and Commodore 64 versions advertised but never released.
Sewer Sam	1983	Interphase Tech.		\$10.50-37. 00	5	
Frogger	1983	Parker Bros.	Yes, Working	\$5.00-8.50	3	Arcade game port.
Popeye	1983	Parker Bros.		\$15.50-19. 50	4	Port of the Nintendo arcade game.
Q*bert	1983	Parker Bros.		\$7.00-16.5 0	4	Port of the arcade game.
Star Wars: The Empire Strikes Back	1983	Parker Bros.		\$10.50-20. 00	4	Also released for Atari 2600 and Atari 5200.
Super Cobra	1983	Parker Bros.		\$80.00-129 .00	5	Port of the arcade game.
Tutankham	1983	Parker Bros.		\$150.00-15 9.00	5	
Congo Bongo	1983	Sega		\$79.00-217 .00	5	Only Sega-published game for the Intellivision. Received poorly.
Champions hip Tennis	1985	Dextell Ltd.		\$12.00-25. 00	4	An advanced version of the original Tennis, built on the original code.
World Cup Soccer	1985	Dextell Ltd.		\$15.00-40. 00	4	Includes code from NASL Soccer. Developed for the Entertainment Computer System as a one- or two-player game.
Body Slam: Super Pro	1988	INTV Corp.		\$65.00-123 .00	5	

Wrestling					
Chip Shot: Super Pro Golf	1987	INTV Corp.	\$8.50-24.5 0	4	Unlike the other "enhanced" sports games, this game was built from scratch, ignoring the code from the original PGA Golf cartridge.
Commando	1987	INTV Corp.	\$13.50-40. 00	4	Port of the arcade game.
Dig Dug	1987	INTV Corp.	\$31.50-50. 00	2	Originally created by Atari but wasn't completed and source code was not kept. INTV purchased rights to debug and release game working with disassembled code from a prototype. In testing the assembler and disassembler, Dave Warhol created "Deadly Dogs!", a modified version of TRON Deadly Discs using hot dog sprites from BurgerTime rather than men. This code was added to the Dig Dug cartridge and can be accessed by pressing 4+7 on both controllers during startup.
Diner	1987	INTV Corp.	\$27.50-65. 00	2	Burgertime sequel that started as a Masters of the Universe sequel.
Hover Force	1986	INTV Corp.	\$10.00-30. 00	4	Was originally developed under secrecy by Mattel for use with 3D glasses. After Mattel Electronics closed, INTV Corp released it without 3D capabilities.
Learning Fun I	1987	INTV Corp.	\$100.00-40 0.00	5	
Learning Fun II	1987	INTV Corp.	\$171.50-51 2.50	5	
Mountain	1988	INTV Corp.	\$55.50-126	4	Improved version of

Madness: Super Pro Skiing			.00		the code from US Ski Team Skiing
Pole Position	1988	INTV Corp.	\$11.50-43. 50	; ; 1	Arcade game port. A POV driving grame was considered by some to be unsuited to the Intellivision, and the port was difficult but possible.
Original Intelivision game produced by a programme r at Imagic who originally worked at Mattel Electronics.	1987	INTV Corp.	\$12.00-26. 00	1	Improved version of "NBA Basketball" like the other "Super Pro" sports games. Adds a computer opponent and other features
Slap Shot: Super Pro Hockey	1987	INTV Corp.	\$18.00-41. 00	:	Improved version of "NHL Hockey" like the other "Super Pro" sports games. Adds a computer player and other features
Spiker! Super Pro Volleyball	1989	INTV Corp.	\$1054.00-1 237.00	1   	Last official release for the Intellivision and the most expensive today. Uses "Super Pro" marketing term despite the fact that there was no original "Volleyball" like the other "Super Pro" games
Stadium Mud Buggies	1989	INTV Corp.	\$102.50-20 7.50		Only game developed for both Intellivision and NES. Originally developed and announced as an enhanced version of Motocross called "Monster Truck Rally". INTV Corp sold the rights to the NES version and changed the name of the Intellivision version to "Stadium Mud

				Bu	ggies".
Super Pro Decathlon	1988	INTV Corp.	\$25.00-75. 00	Sujit u ma the	ich like "Spiker! per Pro Volleyball", ses the "Super Pro" irketing term despite fact that there was original ecathalon" game.
Super Pro Football	1986	INTV Corp.	\$7.00-22.5 0	"NF mo	oroved version of FL Football" like st other "Super Pro" orts games.
Thin Ice	1986	INTV Corp.	\$16.50-39. 00	arc roll Boy by arc gar but cha an traj	rt of a Data East cade game about a er-skating "Disco y" trapping women skating squares bund them. The core meplay was kept, the game was anged to be about ice-skating penguin pping other nguins instead.
Thunder Castle	1985	INTV Corp.	\$24.00-51. 00	reu	e art on the box was used from AD&D: easure of Tarmin
Tower of Doom	1987	INTV Corp.	\$33.00-56. 50	anr AD DU DR OF Ca nev Ma INT	as originally nounced as VANCED INGEONS & RAGONS TOWER MYSTERY rtridge, but was ver released by attel Electronics and TV Corp never ensed the D&D me.
Triple Challenge	1987	INTV Corp.	\$48.50-131 .50	Ori as fou gar dro spa rele Act Ch	ginally developed a collection of all or Strategy Network mes. Reversi was opped to save ace, and it was eased as "Triple tion", a collection of ess, Checkers, and ckgammon.
World	1985	INTV Corp.	\$8.00-19.0		igleplayer version of

Champions hip Baseball		0	Major League Baseball. Renamed to avoid using the Major League trademark; however, the title screen says "All-Star Major League Baseball". The game was shipped with a fatal bug; in response, the game manual instructs player to restart their game
			should this happen.