

AccessionIndex: TCD-SCSS-T.20251114.003

Accession Date: 14-Nov-2025

Accession By: Dr.Brian Coghlan and Dr.Avril Coghlan

Object name: Mattel Intellivision game computer

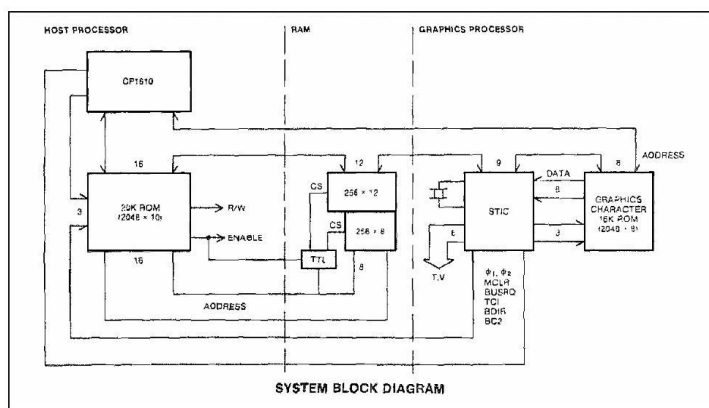
Vintage: 1979

Synopsis: Game console based on General Instruments CP-1610 microprocessor and associated chips.

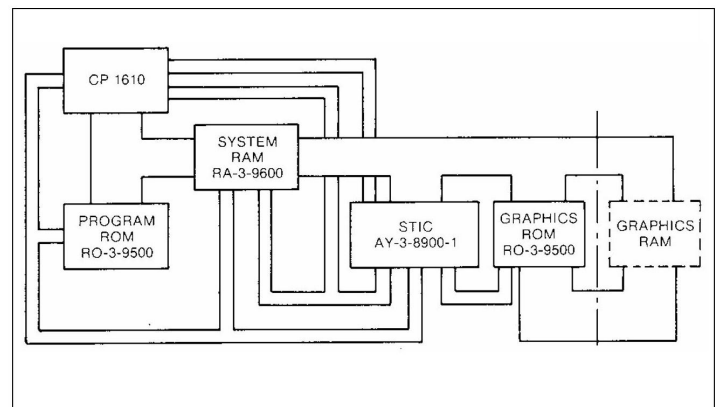
Description:

Mattel's *Intellivision* game computer was introduced in 1979. It was accompanied by (for that time) very realistic sports and strategy games, and became very popular. By 1981, Mattel Electronics had close to 20% of the domestic video game market. Game development continued until 1990, when the *Intellivision* was discontinued. During its short life, after a slow start, about three million of the *Intellivision* were sold.

Mattel had considered producing a game computer since c.1976 [1], with concept and design contributions from Jack Ryan, Richard Chang, Ed Krakauer, Jeff Rochlis, David Rolfe, Dave James, Hal Finney, and in particular David Chandler, along with input from National Semiconductor, MOS Technology, and General Instruments regarding the central, graphics and sound processing chips. A strong candidate was the General Instruments Gimini games chipset [2]. In 1977 the chipset consisted of the CP-1610 microprocessor and RO-3-20480 2048x10 ROMs, an AY-3-8900/8900-1 standard TV interface chip (STIC), an AY-3-9316A 16kB 8x8 dot-matrix graphics ROM, and external SRAMs (see block diagram at left below). The CP-1610 operated only when picture data was not being presented. The chipset was designed for use with standard monochrome or colour domestic TV receivers. Mattel worked with General Instruments to enhance the Gimini chipset [3] to add programmable graphics. Ultimately this enhanced chipset (see block diagram at right below) was selected as the basis for Mattel's eventual product, their *Intellivision*.



Gimini architecture in 1977.



Gimini architecture in 1978.

Sylvania manufactured the *Intellivision* hardware. The final product consisted of the CP-1610 microprocessor plus an RO-3-40960 4096x10 ROM, an AY-3-8900/8900-1 standard TV interface chip (STIC), an RA-3-9600 dual-port bridge of the CP-1610 and STIC busses, an AY-3-9316A 16kB 8x8 dot-matrix graphics ROM, an AY-3-8914 3-channel sound and noise generator, 1456 bytes of SRAM, a 44-pin cartridge/expansion port, two 9-pin game controller ports, and a port for NTSC or PAL TV. In general this hardware was considered to be excellent.

Notable features were the performance of the 16-bit CP-1610, the 3-channel sound plus noise generation, and especially the superior graphics of the STIC. The STIC provided a 20×12 tiled playfield with 8×8 pixel tiles, for a resolution of 159×96. It supported a 16-colour palette, two colours per tile, a foreground/background mode, a colour stack mode, and a coloured squares mode. There were eight priority-ordered addressable sprites, each composed of 8×{sixteen pixels or eight half-pixels}, each also able to be stretched or mirrored vertically/horizontally, with collision detection sprite-to-sprite, sprite-to-background, or sprite-to-screen-border. All this was able to be scrolled pixel-by-pixel horizontally and vertically. All these STIC attributes were re-programmable at each vertical blanking period. At the time of introduction these features were considered to be quite superior for a domestic games machine.

The game controllers had a 12-button numeric keypad (0–9, clear, and enter), four side-located action buttons (two for left handed players, two for right handed players), a pad capable of detecting 16 directions of movement, and plastic overlays to show game-specific key functions. The controller design received mixed reviews.

Rolfe developed the onboard *Exec* control software, Finney contributed sound and music processing, James developed game proposals, leading a team of artists who designed the games graphics, and Caltech summer students programmed the first games.

The *Intellivision* was introduced at the January 1979 Las Vegas CES as a modular home computer comprised of the Master Component including two game controllers for \$165, with a proposed Keyboard Component that was finally released in 1981. In 1982 Mattel released a speech synthesiser cartridge, *Intellivoice*, that the game cartridges plugged into.

By 1980 the Mattel marketing was clearly focussed on gaming, e.g. demonstrating the superior graphics and sound compared to the Atari 2600, and that the *Exec*'s software framework allowed new games to be developed more easily. In its lifetime over one hundred games were developed by Mattel and others. For the innovations it bought to gaming, see [1].

General Instruments' CP-1610 microprocessor [4] (see elsewhere in this catalog) was a derivative of their CP-1600 [5], one of the first single-chip 16-bit microprocessors, which had been developed jointly by General Instruments and Honeywell and was introduced in February, 1975. Its architecture bore a resemblance to the PDP-11. The CP-1610 was a slower derivative of the CP-1600, running at 2MHz not 3-5MHz.

This item in this Collection is an *Intellivision* Master Component including two game controllers, cables, and documentation, all in the original packaging, plus one soccer game cartridge with instructions, also in original packaging.

Many thanks to Brian Coghlan and Avril Coghlan for donating these items.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>
 Click 'Accession Index' (1st column listed) for related folder, or 'About' for further guidance.
 Some of the items below may be more properly part of other categories of this catalog,
 but are listed here for convenience.

Accession Index	Object with Identification
TCD-SCSS-T.20251114.003	Mattel Intellivision game computer. Game console based on General Instruments CP-1610 microprocessor and associated chips. 1979.
TCD-SCSS-T.20251114.003.01	Mattel Intellivision original packaging.
TCD-SCSS-T.20251114.003.02	Mattel Intellivision game computer.
TCD-SCSS-T.20251114.003.03	Mattel Intellivision warranty card.
TCD-SCSS-T.20251114.003.04	Mattel Intellivision game owners club leaflet.
TCD-SCSS-T.20251114.003.05	Mattel Intellivision master component owner's manual.
TCD-SCSS-T.20251114.003.06	Mattel Intellivision mains cable.
TCD-SCSS-T.20251114.003.07	Mattel Intellivision TV cable.
TCD-SCSS-T.20251114.003.08	Mattel Intellivision soccer game original packaging.
TCD-SCSS-T.20251114.003.09	Mattel Intellivision soccer game cartridge.
TCD-SCSS-T.20251114.003.10	Mattel Intellivision soccer game instructions.
TCD-SCSS-T.20251114.003.11	Mattel Intellivision soccer game guarantee.
TCD-SCSS-T.20251114.003.12	2 x Mattel Intellivision soccer game overlays.
TCD-SCSS-T.20251114.002	General Instruments CP-1600 microprocessor and associated chips. One of the first single-chip 16-bit processors, similar to the PDP-11. 1975.
TCD-SCSS-X.20250916.001	Dr. Brian Coghlan's Collection of Early Microprocessors. An extensive and nearly complete set of unused 1970s microprocessor chips, most accompanied with documentation, some with demonstration boards. 1971.

References:

1. Wikipedia, *Intellivision*, see:
<https://en.wikipedia.org/wiki/Intellivision>
 Last browsed to on 14-Nov-2025.
2. General Instruments, *GIMINI Programmable Game Set*, see:
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/hardware/TCD-SCSS-T.20251114.003/General-Instruments-Microelectronics-DataCatalog-1977.pdf>
 Last browsed to on 14-Nov-2025.
3. General Instruments, *GIMINI TV Game Circuits*, see:
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/hardware/TCD-SCSS-T.20251114.003/General-Instruments-Microelectronics-Gimini-Catalog-1978.pdf>
 Last browsed to on 14-Nov-2025.
4. General Instruments, *CP-1610 microprocessor*, see:
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/hardware/TCD-SCSS-T.20251114.003/General-Instruments-CP1610-datasheet.pdf>
 Last browsed to on 14-Nov-2025.
5. Wikipedia, *General Instrument CP1600*, see:
https://en.wikipedia.org/wiki/General_Instrument_CP1600
 Last browsed to on 14-Nov-2025.



Figure 1: Mattel Intellivision in original packaging, front view.



Figure 2: Mattel Intellivision in original packaging, rear view.



Figure 3: Mattel Intellivision in original packaging, left side view.

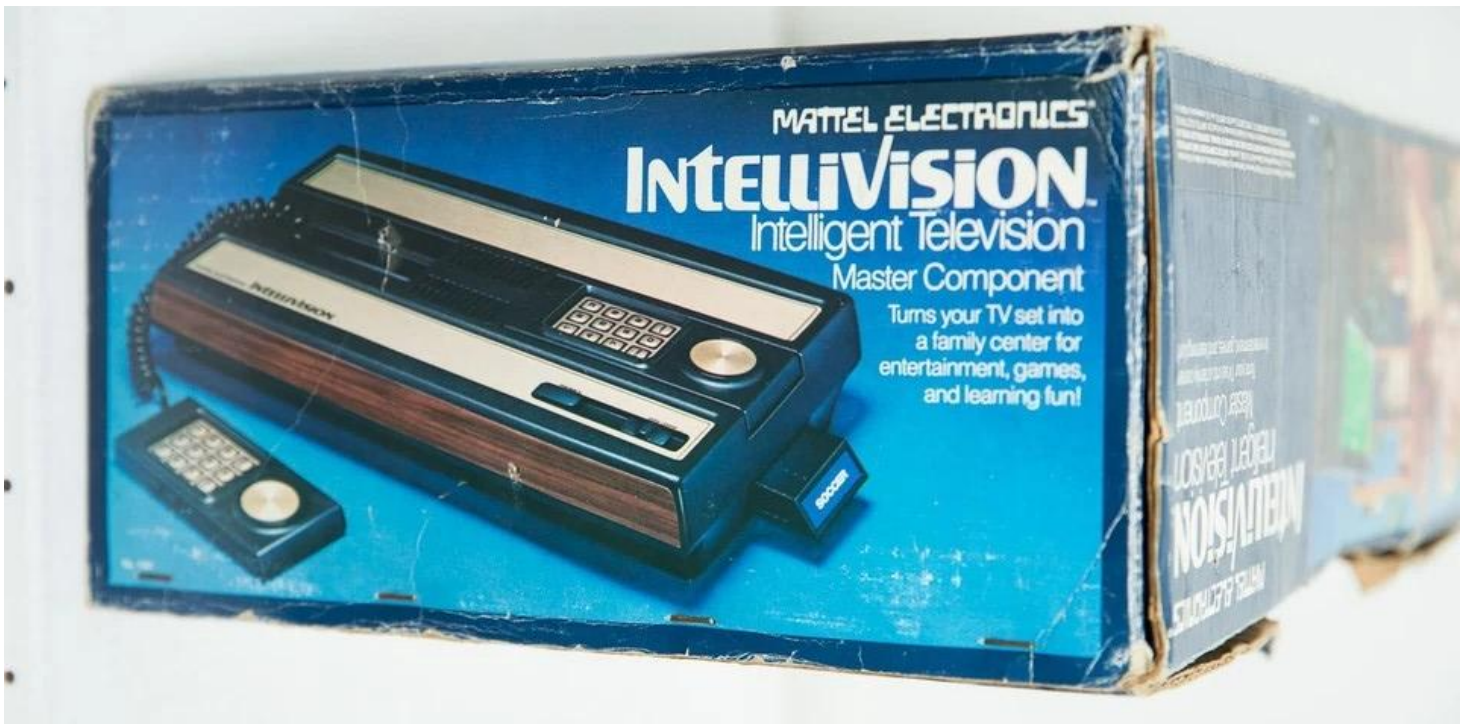


Figure 4: Mattel Intellivision in original packaging, right side view.



Figure 5: Mattel Intellivision in original packaging, front view.



Figure 6: Mattel Intellivision in original packaging, rear view.



Figure 7: Mattel Intellivision in original packaging, side view.



Figure 8: Mattel Intellivision in original packaging, top view.

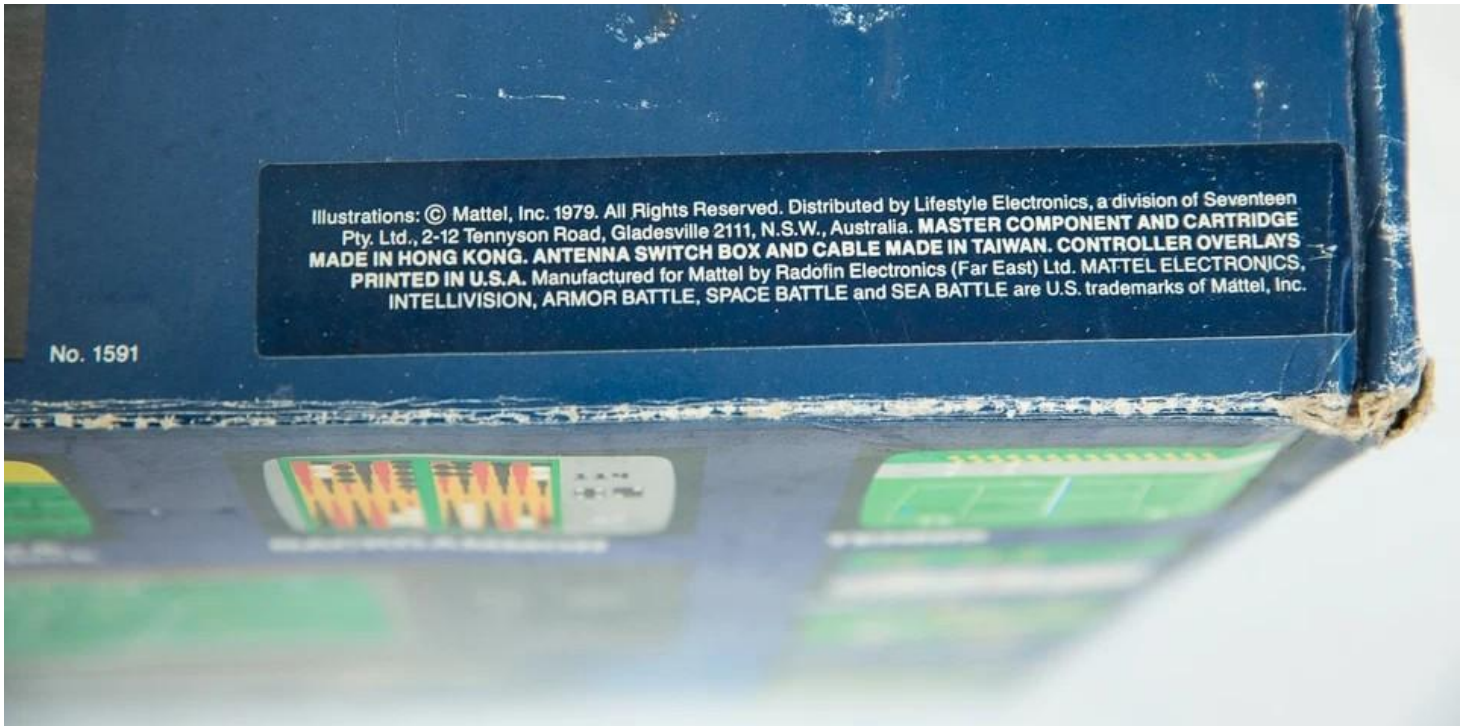


Figure 9: Mattel Intellivision in original packaging, top view closeup.



Figure 10: Mattel Intellivision.



Figure 11: Mattel Intellivision in original packaging, unpacking.



Figure 12: Mattel Intellivision Master Component, unpacked, front view.



Figure 13: Mattel Intellivision Master Component, front view.



Figure 14: Mattel Intellivision Master Component, top view.



Figure 15: Mattel Intellivision Master Component, with game controllers withdrawn.



Figure 16: Mattel Intellivision Master Component, left three-quarter closeup.



Figure 17: Mattel Intellivision Master Component, right three-quarter coseup.



Figure 18: Mattel Intellivision Master Component, right side view.



Figure 19: Mattel Intellivision Master Component, rear view.



Figure 20: Mattel Intellivision Master Component, bottom view.



Figure 21: Mattel Intellivision Master Component, rear bottom view.



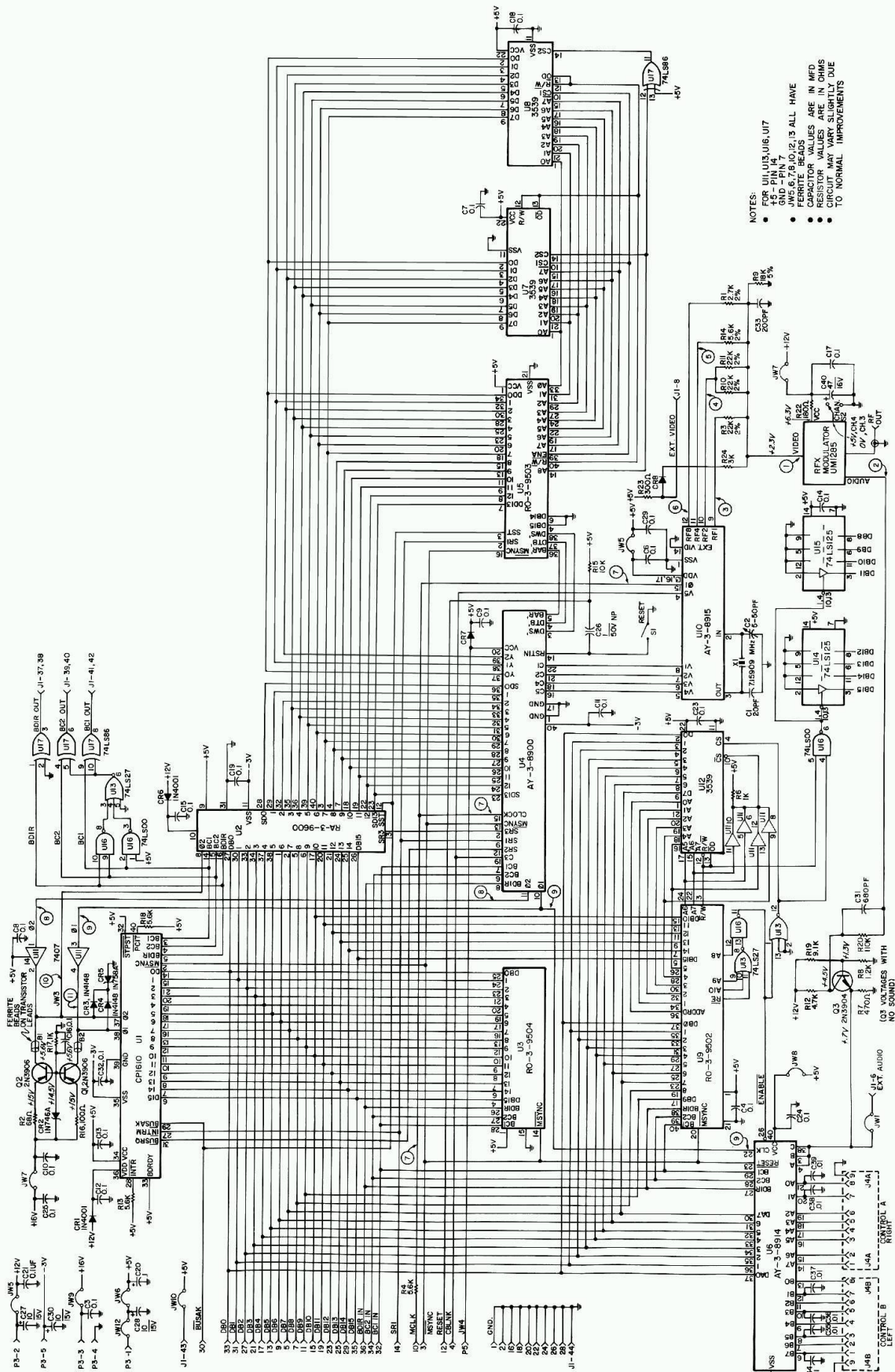
Figure 22: Mattel Intellivision Master Component, bottom view.



Figure 23: Mattel Intellivision Master Component, lower bottom view closeup, showing manufacturing labels.



Figure 24: Mattel Intellivision Master Component, upper bottom view closeup, showing manufacturing stamp.



- NOTES:
- FOR U1, U13, U16, U17
 - R4D - PIN 4
 - R4E, R4F, R4G, R4H, R4I, R4J, R4K, R4L, R4M, R4N, R4O, R4P, R4Q, R4R, R4S, R4T, R4U, R4V, R4W, R4X, R4Y, R4Z, R4AA, R4AB, R4AC, R4AD, R4AE, R4AF, R4AG, R4AH, R4AI, R4AJ, R4AK, R4AL, R4AM, R4AN, R4AO, R4AP, R4AQ, R4AR, R4AS, R4AT, R4AU, R4AV, R4AW, R4AX, R4AY, R4AZ, R4BA, R4BB, R4BC, R4BD, R4BE, R4BF, R4BG, R4BH, R4BI, R4BJ, R4BK, R4BL, R4BM, R4BN, R4BO, R4BP, R4BQ, R4BR, R4BS, R4BT, R4BU, R4BV, R4BW, R4BX, R4BY, R4BZ, R4CA, R4CB, R4CC, R4CD, R4CE, R4CF, R4CG, R4CH, R4CI, R4CJ, R4CK, R4CL, R4CM, R4CN, R4CO, R4CP, R4CQ, R4CR, R4CS, R4CT, R4CU, R4CV, R4CW, R4CX, R4CY, R4CZ, R4DA, R4DB, R4DC, R4DD, R4DE, R4DF, R4DG, R4DH, R4DI, R4DJ, R4DK, R4DL, R4DM, R4DN, R4DO, R4DP, R4DQ, R4DR, R4DS, R4DT, R4DU, R4DV, R4DW, R4DX, R4DY, R4DZ, R4EA, R4EB, R4EC, R4ED, R4EE, R4EF, R4EG, R4EH, R4EI, R4EJ, R4EK, R4EL, R4EM, R4EN, R4EO, R4EP, R4EQ, R4ER, R4ES, R4ET, R4EU, R4EV, R4EW, R4EX, R4EY, R4EZ, R4FA, R4FB, R4FC, R4FD, R4FE, R4FF, R4FG, R4FH, R4FI, R4FJ, R4FK, R4FL, R4FM, R4FN, R4FO, R4FP, R4FQ, R4FR, R4FS, R4FT, R4FU, R4FV, R4FW, R4FX, R4FY, R4FZ, R4GA, R4GB, R4GC, R4GD, R4GE, R4GF, R4GG, R4GH, R4GI, R4GJ, R4GK, R4GL, R4GM, R4GN, R4GO, R4GP, R4GQ, R4GR, R4GS, R4GT, R4GU, R4GV, R4GW, R4GX, R4GY, R4GZ, R4HA, R4HB, R4HC, R4HD, R4HE, R4HF, R4HG, R4HH, R4HI, R4HJ, R4HK, R4HL, R4HM, R4HN, R4HO, R4HP, R4HQ, R4HR, R4HS, R4HT, R4HU, R4HV, R4HW, R4HX, R4HY, R4HZ, R4IA, R4IB, R4IC, R4ID, R4IE, R4IF, R4IG, R4IH, R4II, R4IJ, R4IK, R4IL, R4IM, R4IN, R4IO, R4IP, R4IQ, R4IR, R4IS, R4IT, R4IU, R4IV, R4IW, R4IX, R4IY, R4IZ, R4JA, R4JB, R4JC, R4JD, R4JE, R4JF, R4JG, R4JH, R4JI, R4JJ, R4JK, R4JL, R4JM, R4JN, R4JO, R4JP, R4JQ, R4JR, R4JS, R4JT, R4JU, R4JV, R4JW, R4JX, R4JY, R4JZ, R4KA, R4KB, R4KC, R4KD, R4KE, R4KF, R4KG, R4KH, R4KI, R4KJ, R4KK, R4KL, R4KM, R4KN, R4KO, R4KP, R4KQ, R4KR, R4KS, R4KT, R4KU, R4KV, R4KW, R4KX, R4KY, R4KZ, R4LA, R4LB, R4LC, R4LD, R4LE, R4LF, R4LG, R4LH, R4LI, R4LJ, R4LK, R4LL, R4LM, R4LN, R4LO, R4LP, R4LQ, R4LR, R4LS, R4LT, R4LU, R4LV, R4LW, R4LX, R4LY, R4LZ, R4MA, R4MB, R4MC, R4MD, R4ME, R4MF, R4MG, R4MH, R4MI, R4MJ, R4MK, R4ML, R4MM, R4MN, R4MO, R4MP, R4MQ, R4MR, R4MS, R4MT, R4MU, R4MV, R4MW, R4MX, R4MY, R4MZ, R4NA, R4NB, R4NC, R4ND, R4NE, R4NF, R4NG, R4NH, R4NI, R4NJ, R4NK, R4NL, R4NM, R4NN, R4NO, R4NP, R4NQ, R4NR, R4NS, R4NT, R4NU, R4NV, R4NW, R4NX, R4NY, R4NZ, R4OA, R4OB, R4OC, R4OD, R4OE, R4OF, R4OG, R4OH, R4OI, R4OJ, R4OK, R4OL, R4OM, R4ON, R4OO, R4OP, R4OQ, R4OR, R4OS, R4OT, R4OU, R4OV, R4OW, R4OX, R4OY, R4OZ, R4PA, R4PB, R4PC, R4PD, R4PE, R4PF, R4PG, R4PH, R4PI, R4PJ, R4PK, R4PL, R4PM, R4PN, R4PO, R4PP, R4PQ, R4PR, R4PS, R4PT, R4PU, R4PV, R4PW, R4PX, R4PY, R4PZ, R4QA, R4QB, R4QC, R4QD, R4QE, R4QF, R4QG, R4QH, R4QI, R4QJ, R4QK, R4QL, R4QM, R4QN, R4QO, R4QP, R4QQ, R4QR, R4QS, R4QT, R4QU, R4QV, R4QW, R4QX, R4QY, R4QZ, R4RA, R4RB, R4RC, R4RD, R4RE, R4RF, R4RG, R4RH, R4RI, R4RJ, R4RK, R4RL, R4RM, R4RN, R4RO, R4RP, R4RQ, R4RR, R4RS, R4RT, R4RU, R4RV, R4RW, R4RX, R4RY, R4RZ, R4SA, R4SB, R4SC, R4SD, R4SE, R4SF, R4SG, R4SH, R4SI, R4SJ, R4SK, R4SL, R4SM, R4SN, R4SO, R4SP, R4SQ, R4SR, R4SS, R4ST, R4SU, R4SV, R4SW, R4SX, R4SY, R4SZ, R4TA, R4TB, R4TC, R4TD, R4TE, R4TF, R4TG, R4TH, R4TI, R4TJ, R4TK, R4TL, R4TM, R4TN, R4TO, R4TP, R4TQ, R4TR, R4TS, R4TT, R4TU, R4TV, R4TW, R4TX, R4TY, R4TZ, R4UA, R4UB, R4UC, R4UD, R4UE, R4UF, R4UG, R4UH, R4UI, R4UJ, R4UK, R4UL, R4UM, R4UN, R4UO, R4UP, R4UQ, R4UR, R4US, R4UT, R4UU, R4UV, R4UW, R4UX, R4UY, R4UZ, R4VA, R4VB, R4VC, R4VD, R4



Figure 26: Mattel Intellivision Master Component documentation.

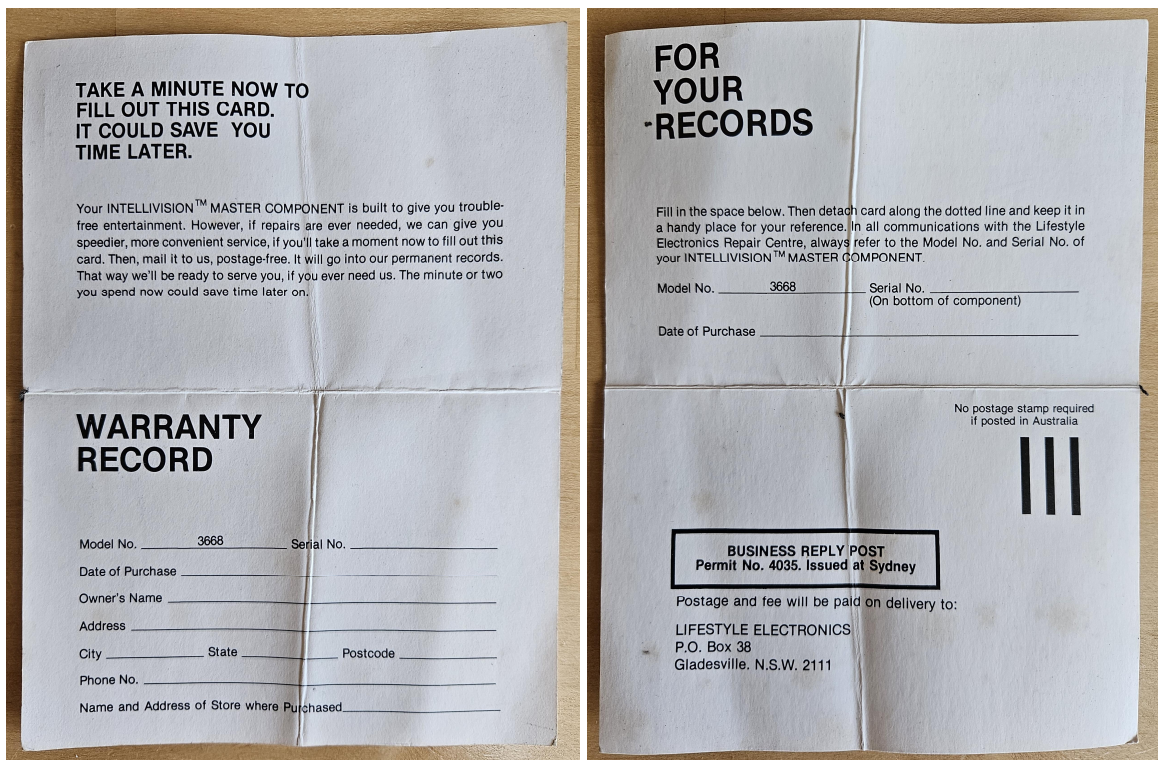


Figure 27: Mattel Intellivision Master Component warranty card.

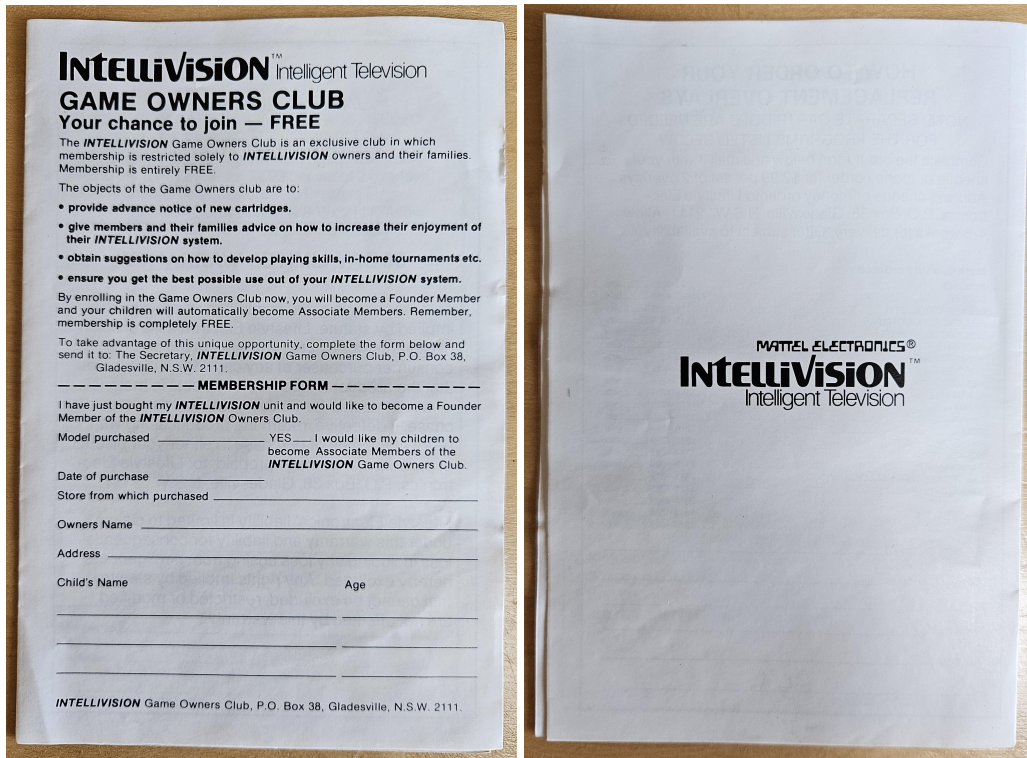


Figure 28: Mattel Intellivision Master Component game owners club membership form, front and rear.

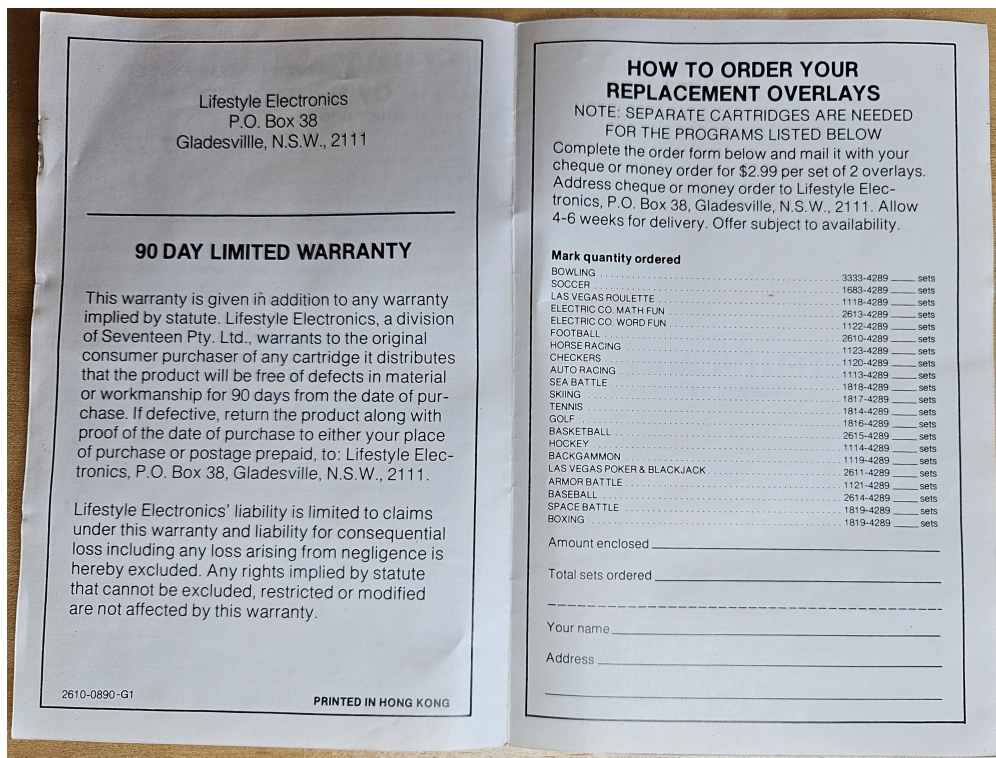


Figure 29: Mattel Intellivision game owners club warranty and overlay order form.



Figure 30: Mattel Intellivision Master Component owner's manual front and rear.

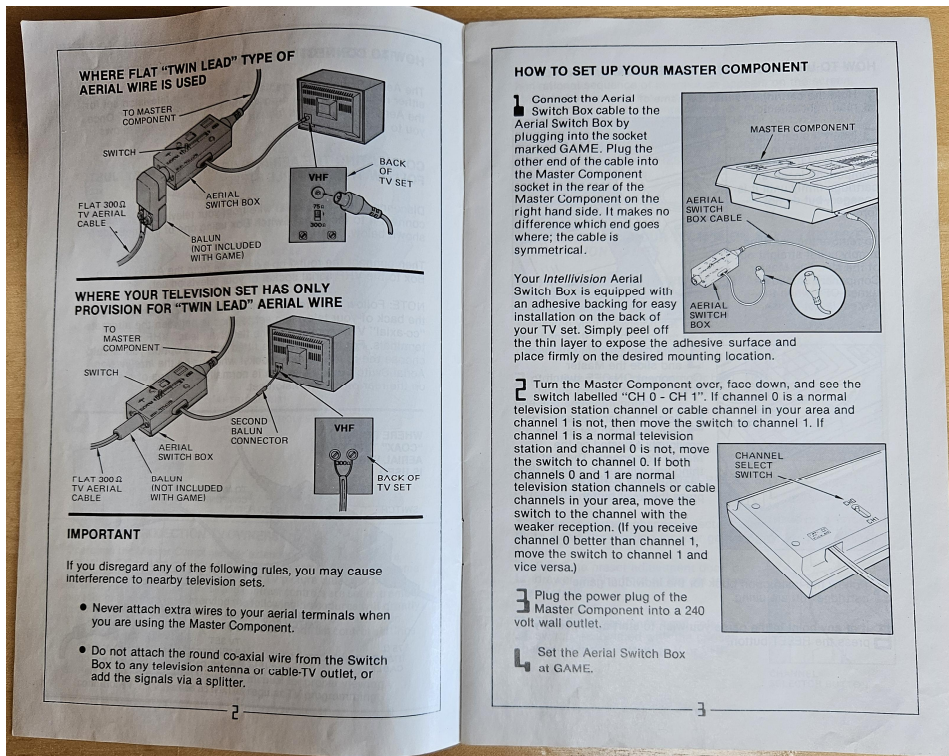


Figure 31: Mattel Intellivision Master Component owner's manual pages 2 and 3.

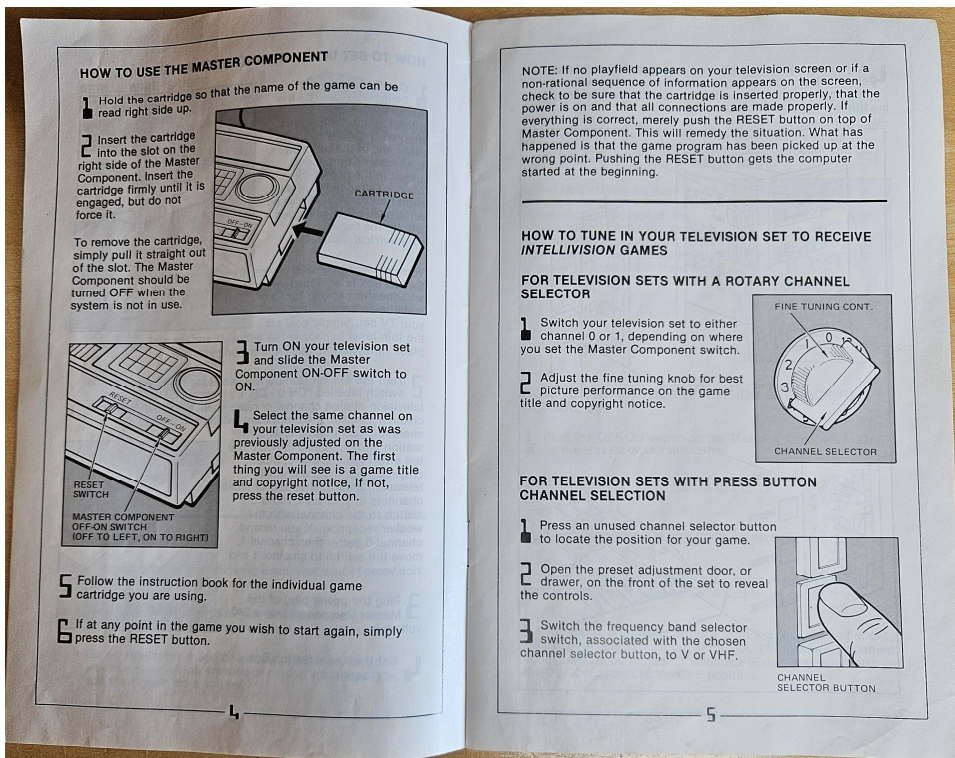


Figure 32: Mattel Intellivision Master Component owner's manual pages 4 and 5.

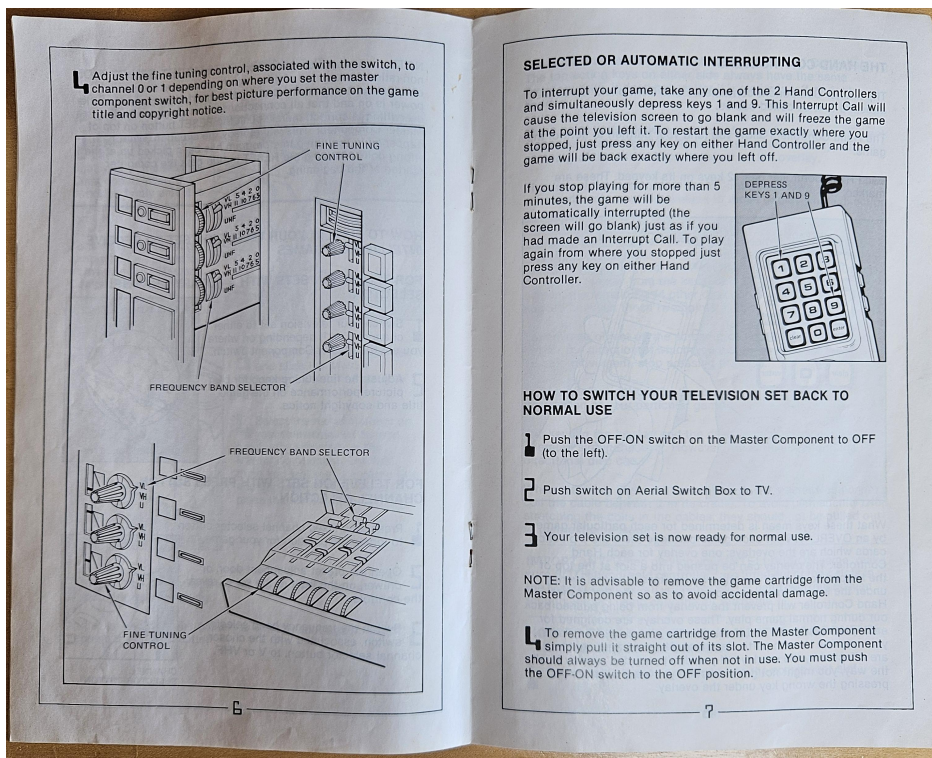


Figure 33: Mattel Intellivision Master Component owner's manual pages 6 and 7.

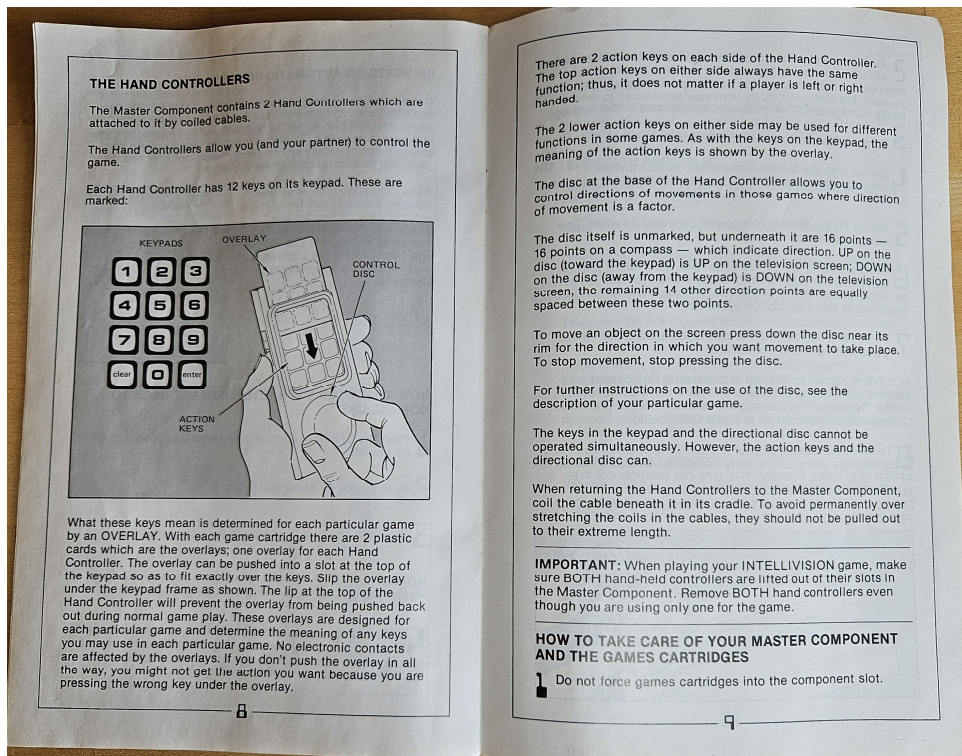


Figure 34: Mattel Intellivision Master Component owner's manual pages 8 and 9.

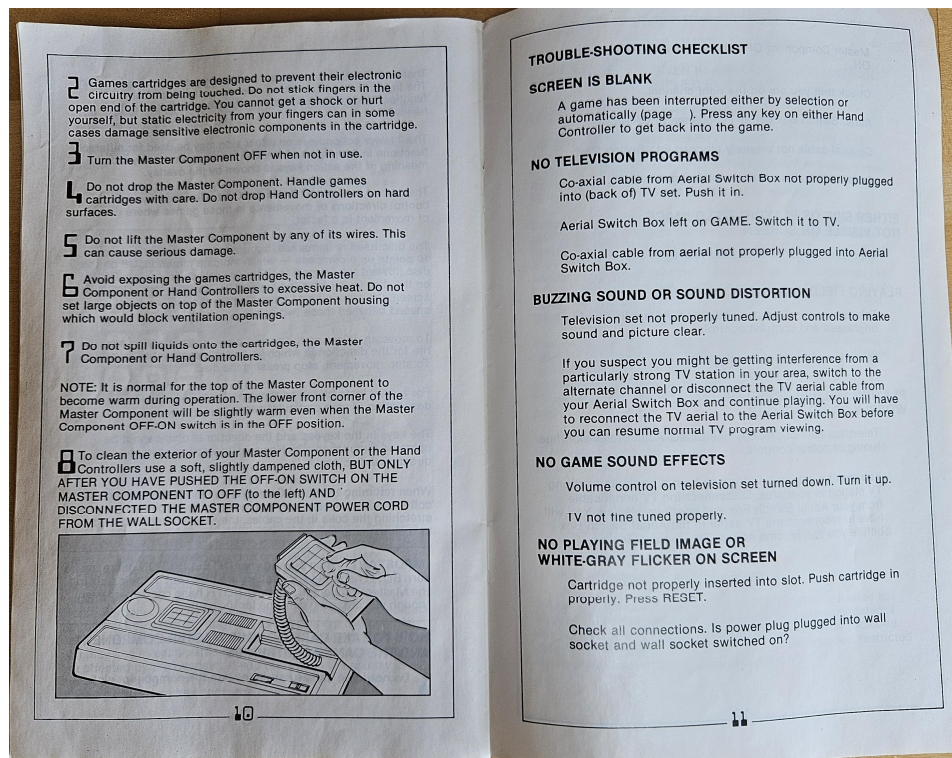


Figure 35: Mattel Intellivision Master Component owner's manual pages 10 and 11.

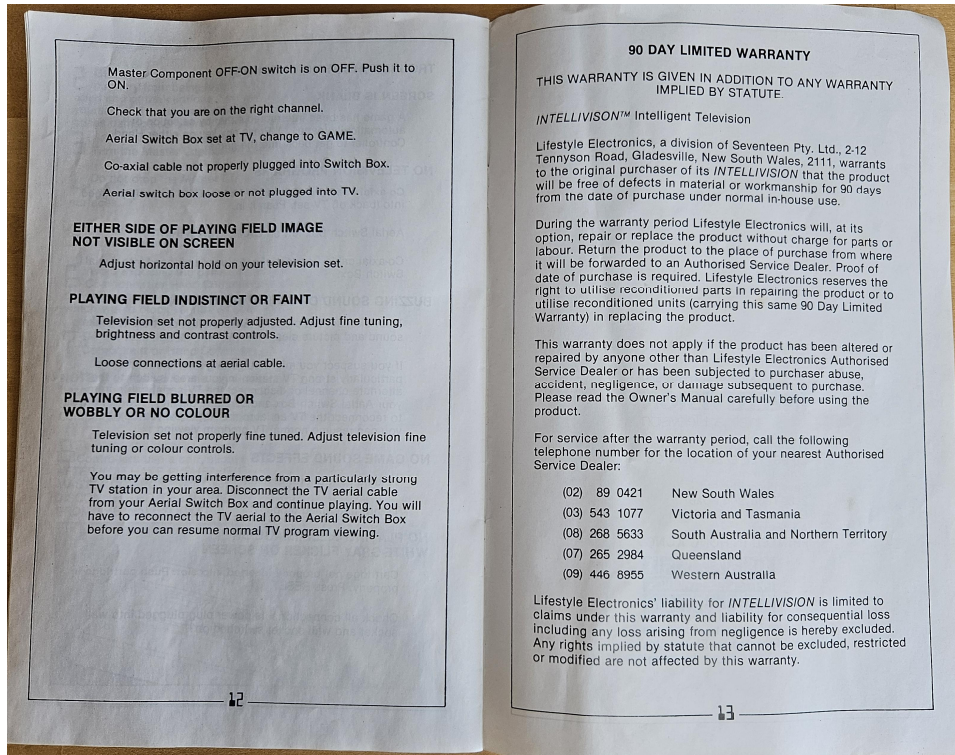


Figure 36: Mattel Intellivision Master Component owner's manual pages 12 and 13.

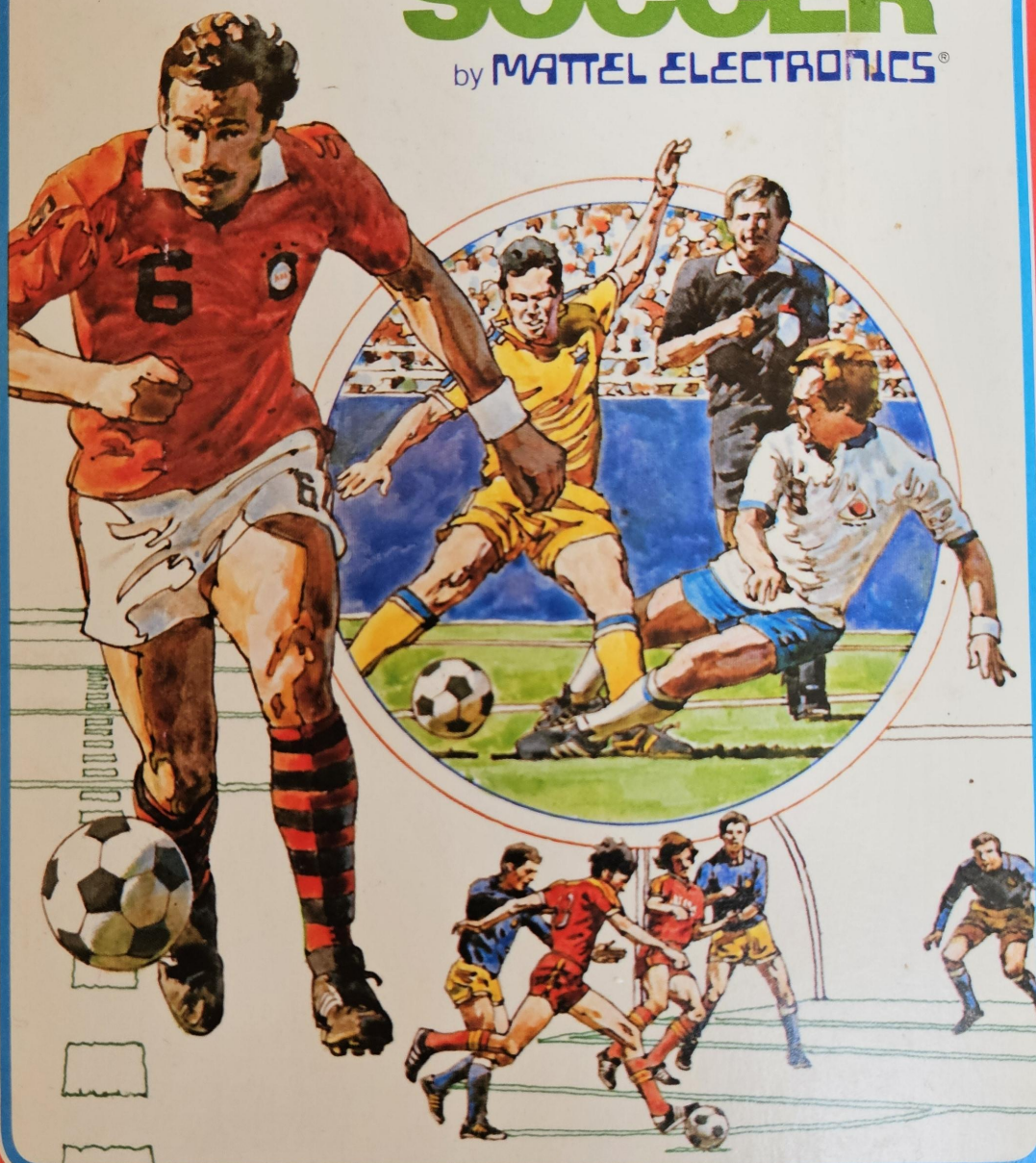


Figure 37: Mattel Intellivision Master Component TV and mains cables.

INTELLIVISION™ Intelligent Television

SOCCER

by MATTEL ELECTRONICS®



Enclosed cartridge for use with
INTELLIVISION™ Master Component
FOR COLOR TV VIEWING ONLY

No. 1683

Figure 38: Mattel Intellivision soccer game, original packaging, front view.

No. 1683

This package contains one Soccer cartridge, two controller overlays and complete playing instructions.

SOCCER cartridge.

Kicking, passing, scoring, stealing the ball! INTELLIVISION™ Soccer puts you on the playing field! Two "10-man" teams, plus goal keepers, compete for 90 thrill-packed minutes! (Simulated time.) Kickoffs, throw-ins & Goalies you can move!



You can make your Goalie move from side to side! Make him deflect kicks, block a score!



Football field has regulation Center Ring, Touchlines, Goal Area, etc. Field crawls across your TV screen.

- Two player game!
- You and your opponent control the ball, mastermind the game, offensively and defensively.
- Authentic Soccer action! Corner kicks, throw-ins & goal kicks! Passing plays by life-like figures!
- Computerized scoring! Scoring totals and time remaining are automatically displayed over the playing field.
- Game sound effects include simulated "Ref's Whistle", "Crowd Noise", "Kicking" sounds and more!

INTELLIVISION™ Intelligent Television

Figure 39: Mattel Intellivision soccer game, original packaging, rear view.

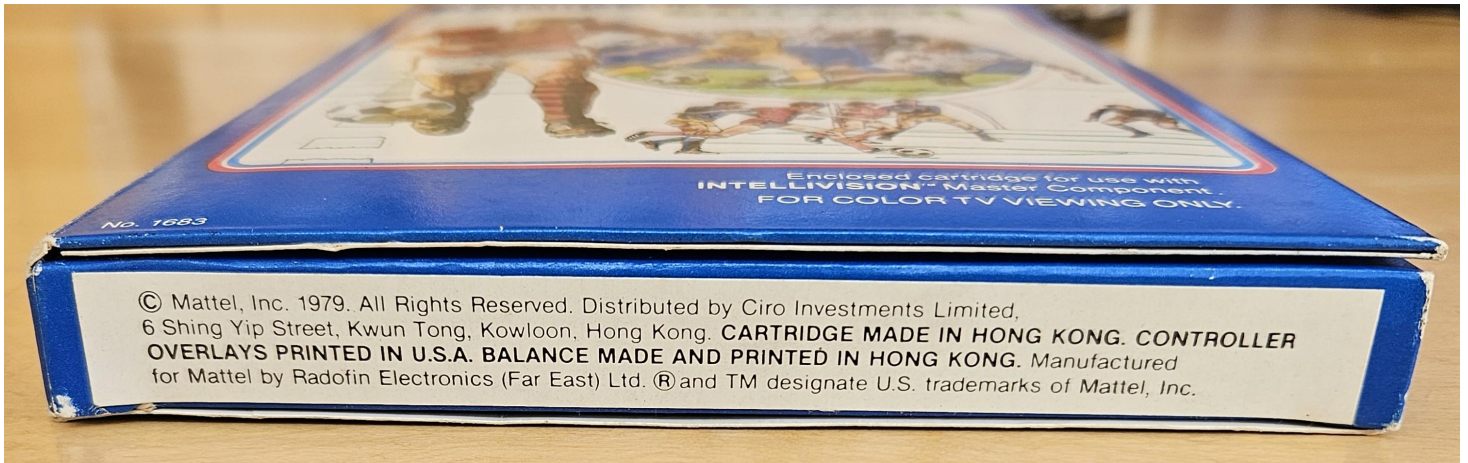


Figure 40: Mattel Intellivision soccer game, original packaging, manufacturing label.

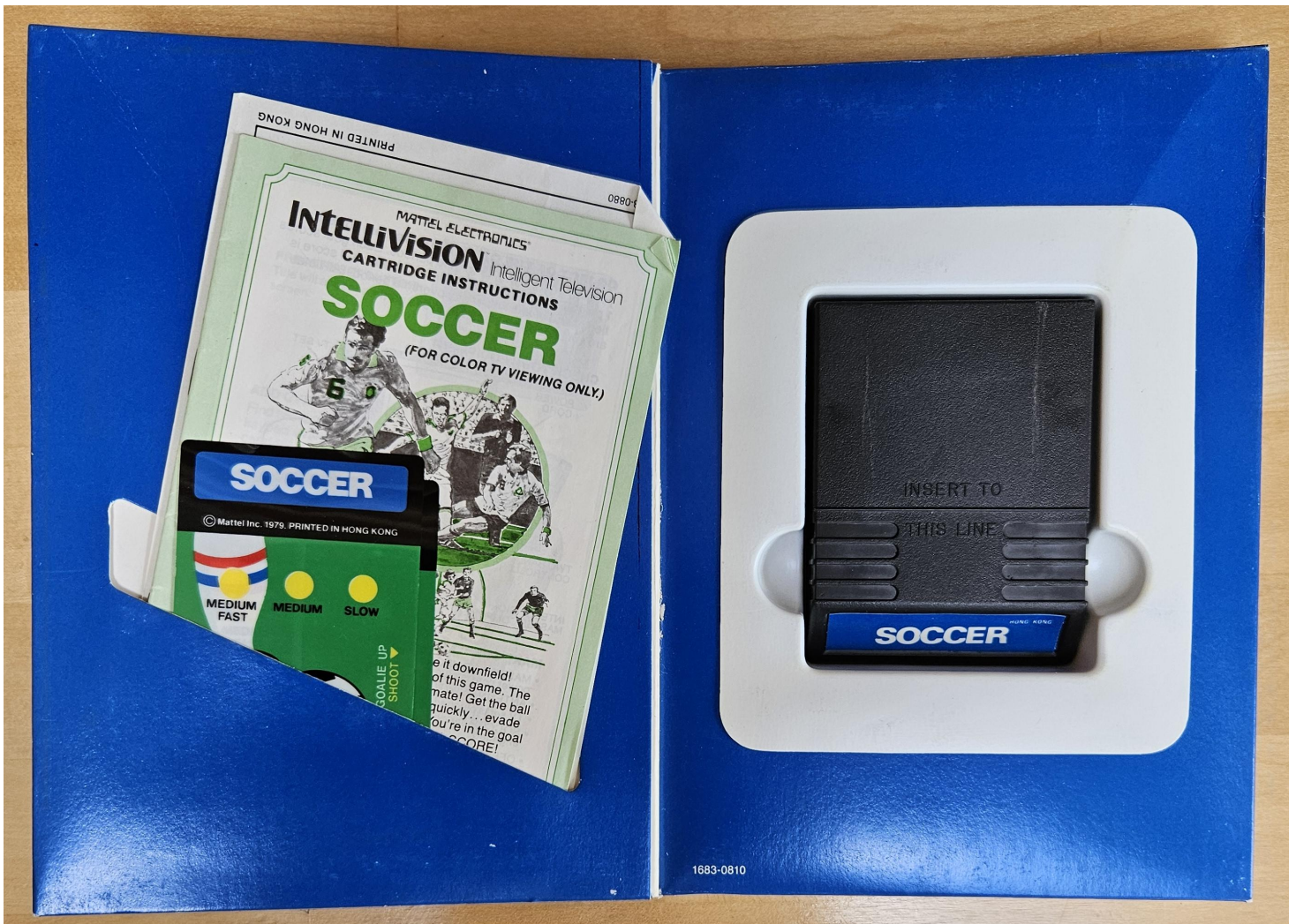


Figure 41: Mattel Intellivision soccer game, original packaging, folded open.



Figure 42: Mattel Intellivision soccer game cartridge.



Figure 43: Mattel Intellivision soccer game overlays.

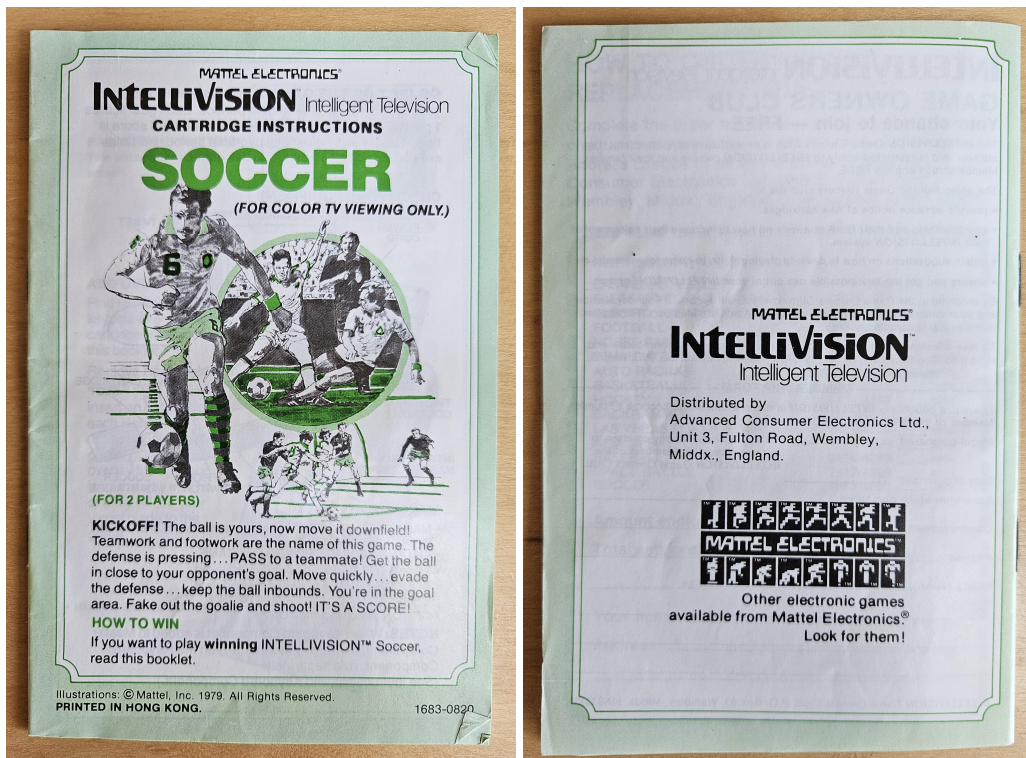


Figure 44: Mattel Intellivision soccer game instructions, front and rear.

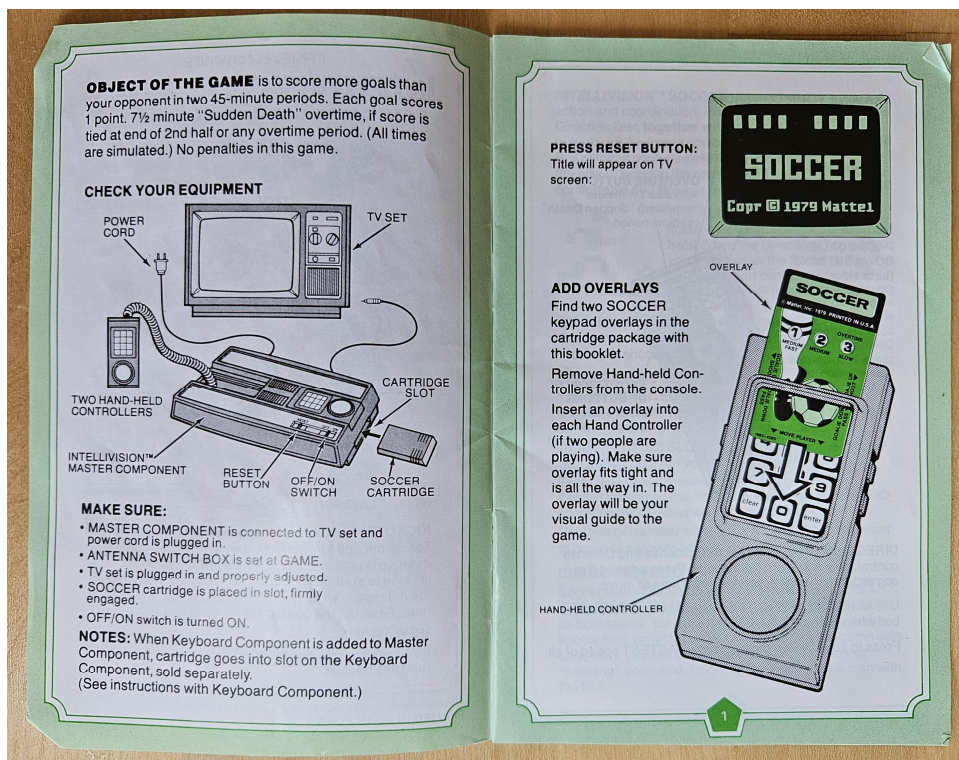


Figure 45: Mattel Intellivision soccer game instructions, frontispiece and page 1.

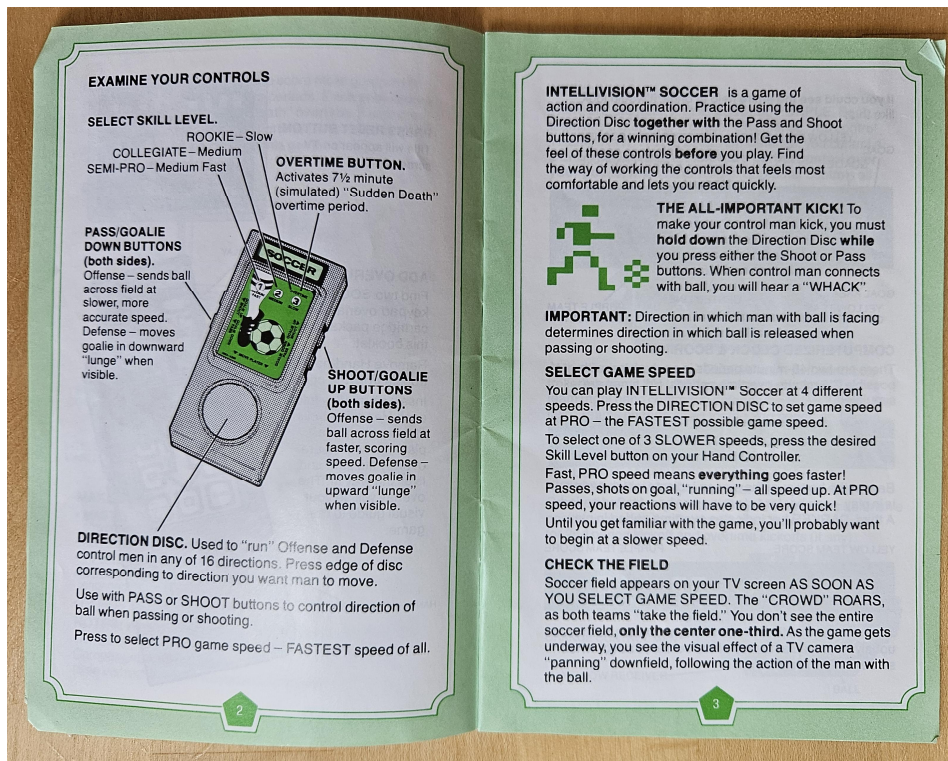


Figure 46: Mattel Intellivision soccer game instructions, pages 2 and 3.

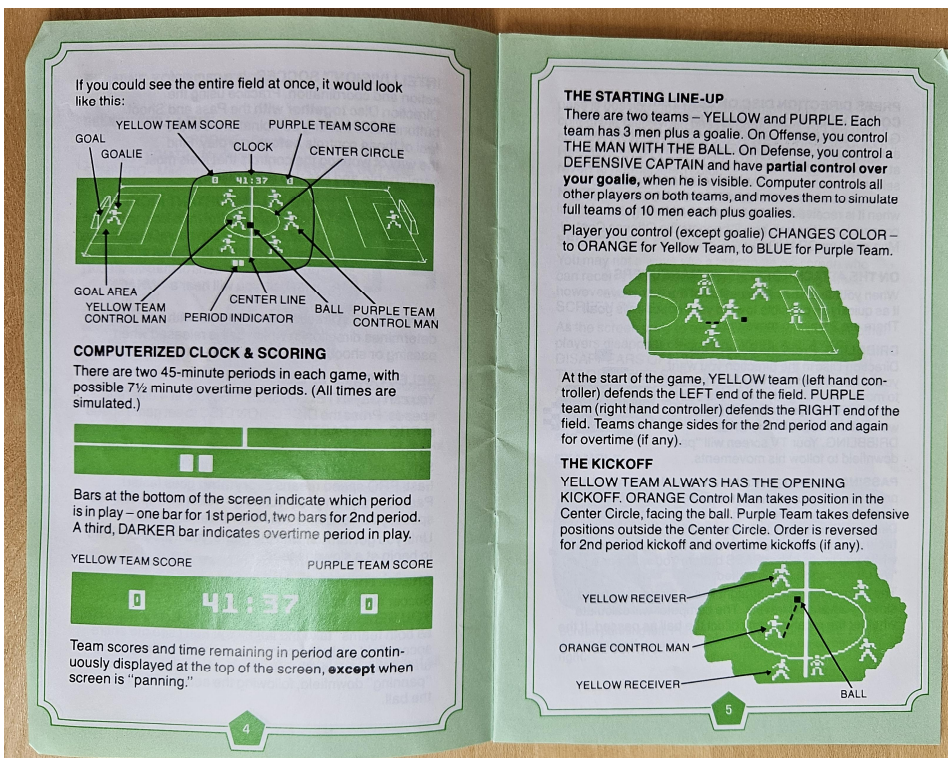


Figure 47: Mattel Intellivision soccer game instructions, pages 4 and 5.

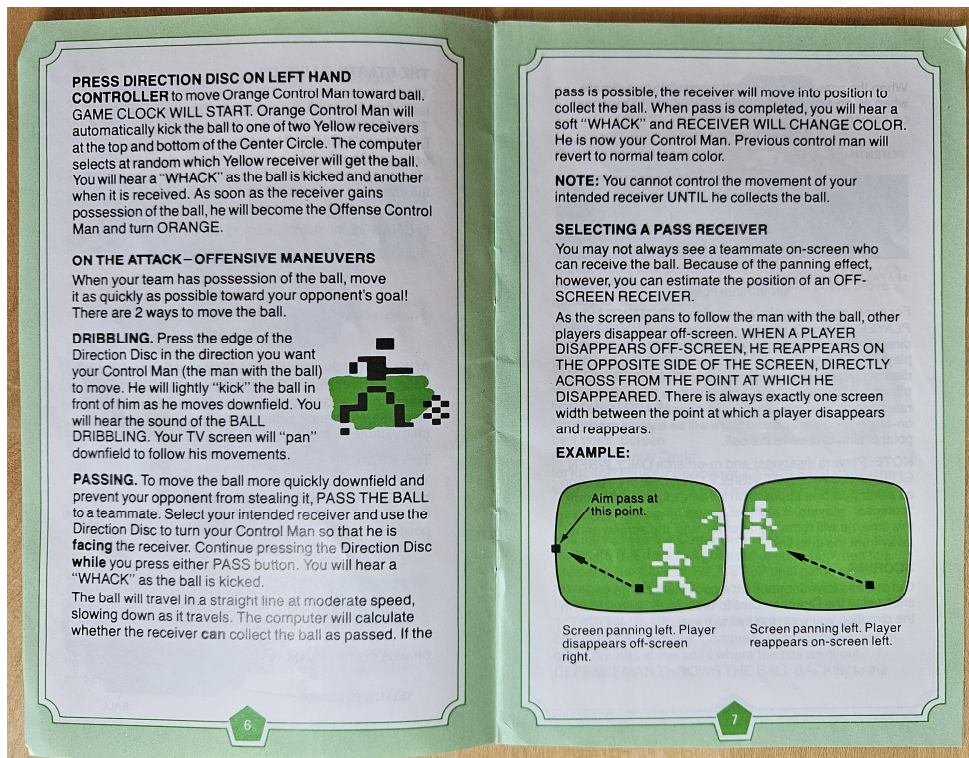


Figure 48: Mattel Intellivision soccer game instructions, pages 6 and 7.

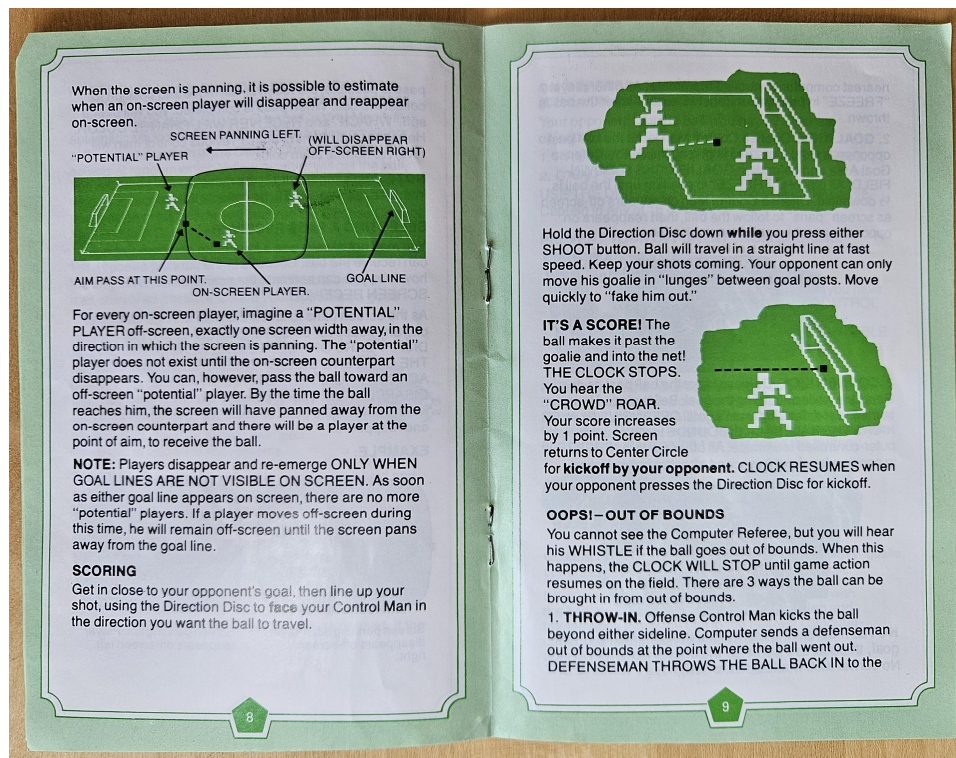


Figure 49: Mattel Intellivision soccer game instructions, pages 8 and 9.

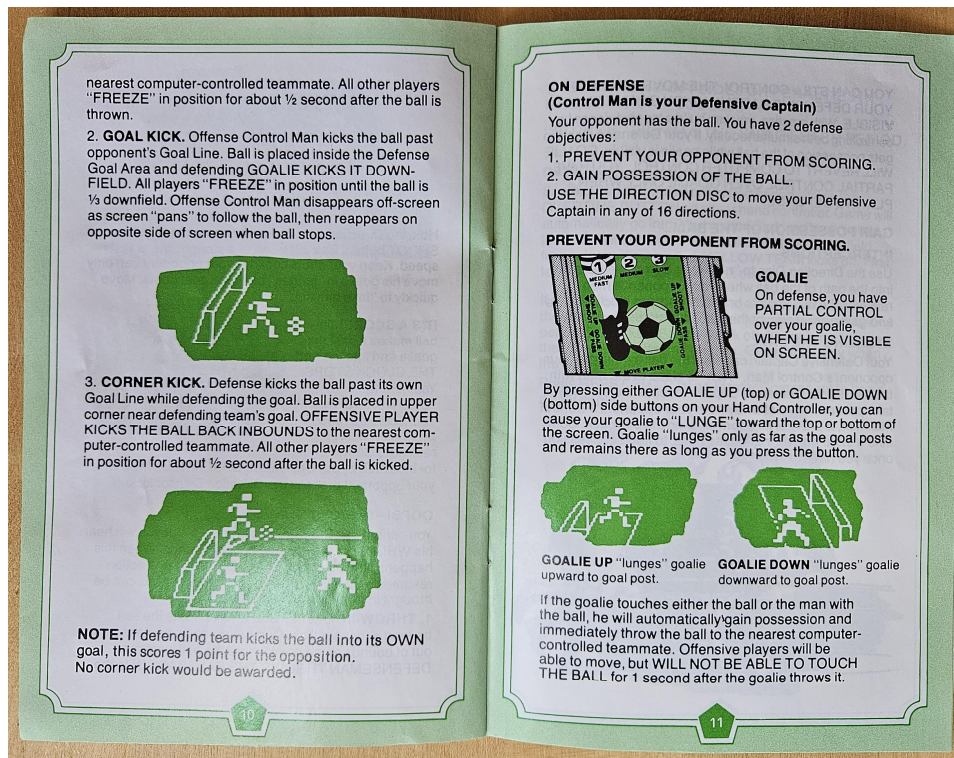


Figure 50: Mattel Intellivision soccer game instructions, pages 10 and 11.

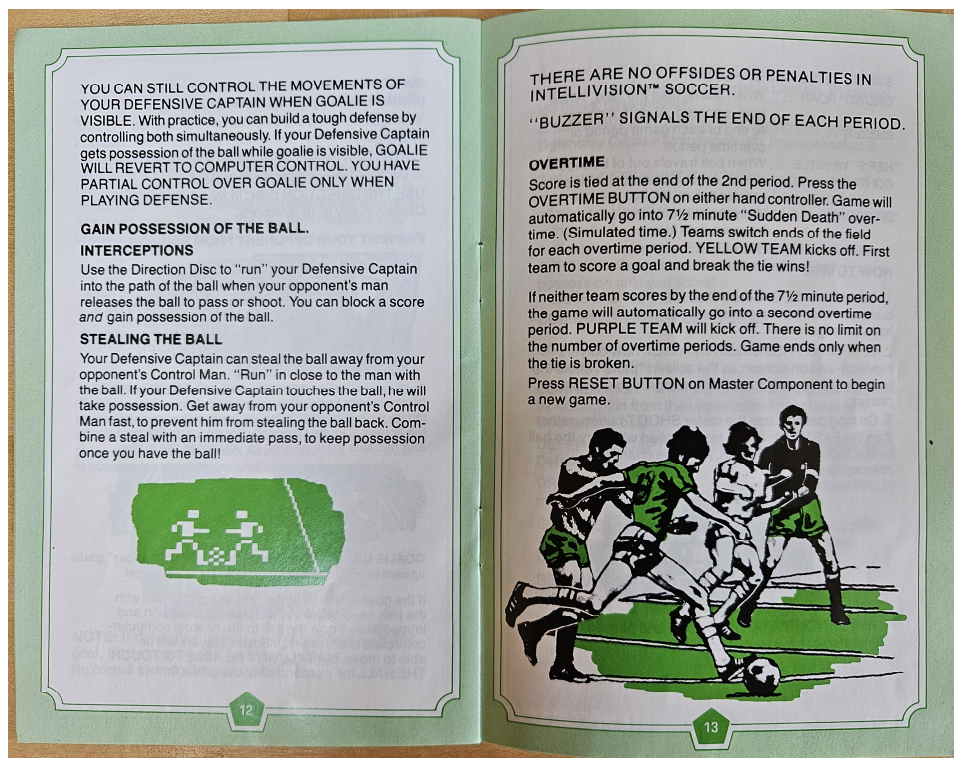


Figure 51: Mattel Intellivision soccer game instructions, pages 12 and 13.

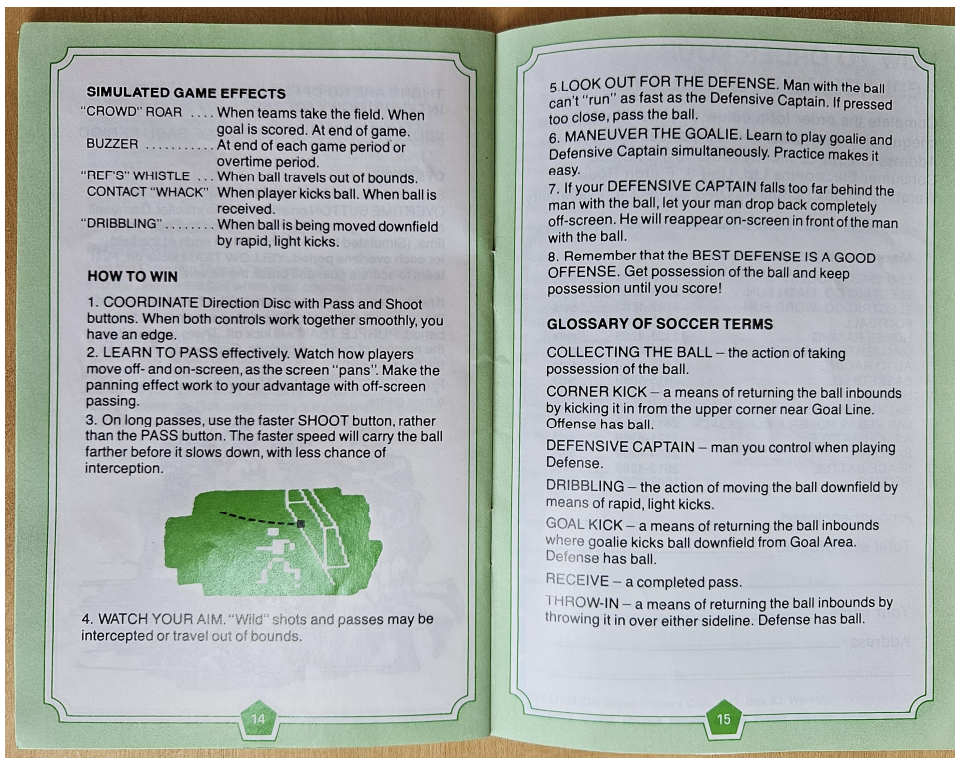


Figure 52: Mattel Intellivision soccer game instructions, pages 14 and 15.

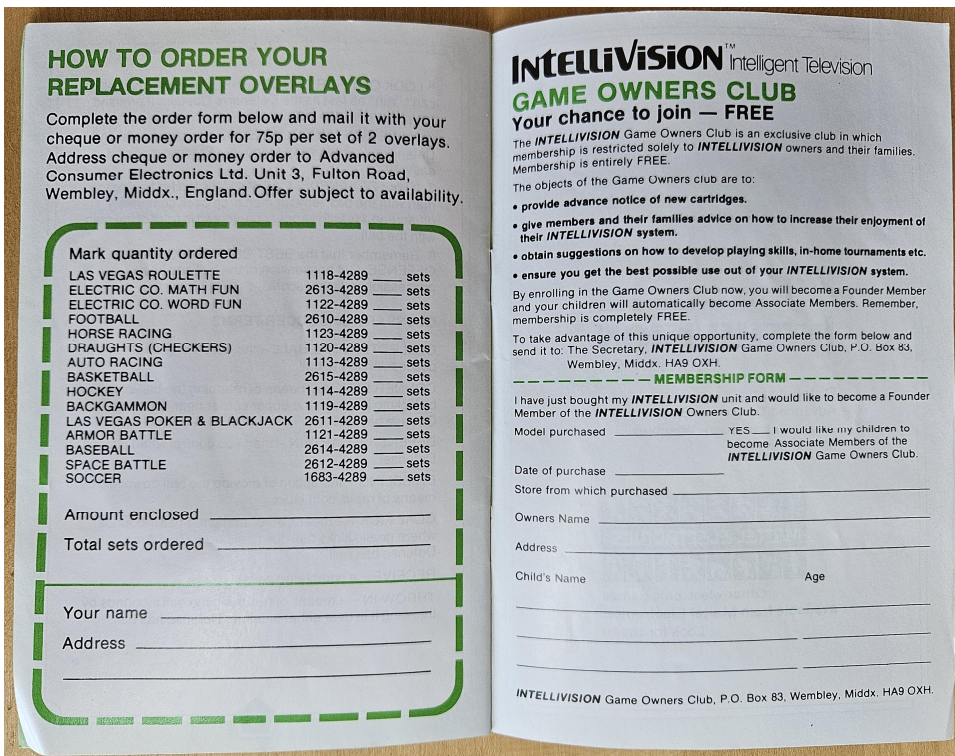


Figure 53: Mattel Intellivision soccer game instructions, last pages: overlay order and game owners club membership forms.



Figure 54: Mattel Intellivision soccer game guarantee.



Figure 55: Mattel Intellivision soccer game opening screen.



Figure 56: Mattel Intellivision soccer game starting state.



Figure 57: Mattel Intellivision soccer game during play.