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Tempest

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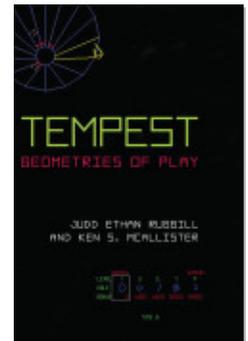
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CHAPTER 4

Life after *Tempest*

Despite its arcade success, *Tempest* has had a humble post-release life. While system ports, clones, hacks, and sequels have appeared with surprising regularity over the past thirty years—and not infrequently with legal abandon—the game has received nowhere near the industrial or cultural recognition of *Space Invaders*, *Pac-Man*, or the like. These more famous games have inspired far more secondary material, from spin-off games to television cartoons to bed sheets and pajamas. One reason for *Tempest*'s post-paucity is Theurer's spartan design, which offers would-be adapters few visual, narrative, or gameplay hooks to draw from, and so there is not much material to build upon.

Likewise, the game's distinctive physical interface—which approximates the control of a heavy piece of machinery—is ideal for *Tempest* but virtually worthless for (the majority of) games whose control schemes are not based on circular and single plane movement. In fact, in the thirty years since *Tempest*'s release, no company has created an inexpensive, dedicated spinner for home use. A number of aftermarket spinners are available to non-commercial arcade machine builders from companies such as Ultimarc, Oscar, and Ithaca Digital Technologies. These devices, however, are not intended to be used out-of-the-box. Such controllers generally require a considerable amount of technical know-how—from basic carpentry to intermediate-level wiring, soldering, and programming—to install.

For do-it-yourselfers not quite ready to build a full-size arcade cabinet with an industrial spinner, less demanding solutions for controlling spinner-based games such as *Tempest*, *Tron*, and *Arkanoid* have been developed. “Mst3kpimp” (2011) on the *Atari Age* web forum, for example, pro-

vides detailed instructions for hacking a 2004 *Jakks Pacific Atari Paddle TV Games* (2004) toy—essentially a handheld paddle that also contains thirteen paddle-based Atari games and connects directly to a television—so that it becomes a passable USB-based *Tempest* spinner. As of the end of 2014, however, we were not able to locate any commercial product for the home market that could be easily connected to a computer or game console for use with a *Tempest* remake, port, clone, or sequel, a sign that today the game is more iconically than ludically valuable.

This is not to say that the game industry is averse to making and selling specialized ancillary controllers: the Nintendo Power Glove is certainly among the most famous of such devices, as is the *Steel Battalion* (2002) controller with its dozens of buttons and switches, left- and right-hand control sticks (used simultaneously), and small pallet of foot-pedals. From light rifles and dance pads to bongo drums and faux Stratocasters, the game industry has always recognized the marketing potential and play appeal of unconventional peripherals.¹ It may seem a bit surprising, then, that *Tempest* for the home has gone without a spinner, especially given the game's nostalgic potency. As we show in this chapter, however, *Tempest's* longevity in the marketplace is only partially related to consumers' access to an authentic arcade experience. More importantly, *Tempest's* staying power flows from the game's value as an arcade *icon*, a “classic” of the industry.

In this chapter, we consider *Tempest* post-release. We recount and analyze its emulations, ports, remakes, sequels, and clones and explore how the game became subject to a long series of corporate instabilities at Atari that, in certain respects, worked in its favor and at least partially explain why *Tempest* remained anchored to an historical moment when other popular games did not. We also examine how *Tempest's* later iterations adhered to and diverged from Theurer's original design and discuss what these changes—often involving the addition of new tubes, power-ups, multi-player modes, and graphical and audio updates—signify about evolving tastes in the video game market.

The Power of Ports and Remakes

There have been at least three dozen attempts to rejuvenate *Tempest* since the game's release in 1981. None of these has been particularly successful in any conventional sense—financial, aesthetic, pleasurable, or historical—yet each has played a part in the life of the Atari brand, beginning with the authorized versions of the game that were released on the ZX Spectrum for

the European market in 1983. The first two of these came from Germany's EMM Software, the less buggy of which was later released in Britain as *G-Force* by Euro-Byte.² These versions of *Tempest* used a top-down perspective and looked considerably more primitive than their arcade progenitor. A remake for the ZX Spectrum was also released in the United Kingdom in 1983 by Mikro-Gen. It used a side-view instead of a top-down perspective, and as a result, even though the game was called *Tempest*, it bore a stronger resemblance to Williams's 1980 arcade classic *Defender*.

Within a few years, home computer systems had begun to approximate the audiovisual quality of arcade games, and during the second half of the 1980s, several higher-end licensed home versions of *Tempest* were brought to market. The versions for the BBC Microcomputer System (1985) and its more affordable cousin the Acorn Electron (1985) were a step up from what home gamers had seen before: the perspective was correct, the vectors and tubes accurately drawn, and the sound was reasonably close. A new version for the ZX Spectrum and its rival the Amstrad Colour Personal Computer was released in 1987, controversially both distributed on the same cassette by a third-party developer, followed by a port for the Atari ST in 1989.³ Most of these ports appear to have been modestly successful and remain relatively easy to find through online auction houses, a phenomenon that suggests reasonably high unit sales originally.

Tempest also enjoyed a limited extension of its notoriety and iconicity through a variety of "arcade classics" releases, that is, ported versions of popular arcade games bundled together on one disk. In 1993, for example, *Microsoft Arcade* for both Windows 3.1 and the Apple Macintosh introduced home computer gamers to *Tempest*, *Battlezone*, *Asteroids*, *Centipede*, and *Missile Command*.⁴ Similarly, Midway's *Arcade's Greatest Hits: The Atari Collection 1* brought these five games—plus *Super Breakout* (1979)—to the Sony PlayStation, Sega Saturn, and Super Nintendo Entertainment System in 1996 and 1997. In 1999, Hasbro and Digital Eclipse released *Atari Arcade Hits: Volume 1*, which contained these six games plus *PONG*, *Asteroids Deluxe* (1981), *Crystal Castles* (1983), *Gravitar* (1982), *Millipede* (1982), and *Warlords* (1980). *Atari Arcade Hits: Volume 2* was released in 2000, and the 2001 *Atari Anniversary Edition* effectively combined all the coin-operated titles on the two *Atari Arcade Hits* volumes and made them accessible to the latest generation of consoles—Sega Dreamcast, PlayStation, PC, and (in 2002) the Nintendo Game Boy Advance.⁵ One year later, Hasbro and Digital Eclipse teamed up again to bundle *Tempest* with a much larger variety of classics—a total of twelve arcade games and sixty-two Atari 2600

titles—for its 2003 *Atari Anthology* for *Windows 98*. This disk also included a high-resolution *Tempest* desktop wallpaper theme.

By 2005, *Atari Anthology* had been released for the Microsoft Xbox and Sony PlayStation 2, and the *Retro Atari Classics* collection had been released for the Nintendo DS, thus marking *Tempest*'s migration to the sixth generation of gaming consoles. In 2007, the game was carried—in both standard and updated forms—into the seventh console generation when it appeared in the Xbox Arcade Live area of the Microsoft Xbox 360's online interface. *Tempest* also became a release title for Microsoft's 2010 classic gaming service called "Game Room," accessible through the Xbox 360, Windows PCs, and devices deploying the Windows Phone Operating System for mobile devices.

Finally, for nearly as long as the World Wide Web has existed there have been web-accessible versions of *Tempest*. These include early *Flash* and JavaScript programs as well as downloadable apps for browsers such as Google Chrome and various mobile devices. While there are too many of these web-accessible versions to list here, one representative sample is Code Mystics' *Tempest*, which can be found on dozens (if not hundreds) of websites around the world.⁶

In many respects, the history of *Tempest*'s appearance in arcade game anthologies is also the history of Atari itself, particularly after the mid-1990s.⁷ In 1996, for example, Atari was sold to JTS, and two years later a controlling share in the game maker was sold to Hasbro. This share was passed to Infogrames Entertainment in 2000 when it acquired Hasbro, and in 2008 Infogrames purchased Atari's outstanding shares and converted the company into a privately and wholly owned subsidiary. When Atari was sold to JTS, many of its valuable properties (including *Tempest*) were bundled by the new owner and pushed to market—*Arcade's Greatest Hits: The Atari Collection 1*—to remonetize Atari's catalog and perhaps offset some of the expense and debt JTS had just assumed. In 1999, not long after JTS sold Atari to Hasbro due to the game developer's continued insolvency, *Atari Arcade Hits: Volume 1* was developed and released, again presumably to ease what was now Hasbro's new debt. When Hasbro passed to Infogrames, Atari's new owner also attempted to remonetize the company's catalog, first with the 2001 and 2002 multi-platform versions of the *Atari Anniversary Edition*, then with the 2003 eighty-game collection *Atari Anthology*, and so on through the new editions for the sixth and seventh generation of consoles. As the fortunes of Atari rose and fell, among the few low-hanging fruits each of the company's new owners could pick were the iconic and thus most lucrative brands—including *Tempest*. Paradoxically, then, it was Atari's

perpetual financial jeopardy (after 1996 at least) that helped keep *Tempest* in the public eye long after it had disappeared from arcades.

Prototypes and Hacks

While *Tempest* itself endured in part as a monetizable piece of a software catalog, it also persisted in the form of “also ran” titles. These versions were, in one way or another, fueled by the original game even as they often violated its look, feel, and play qualities. For example, *Tempest* prototypes were made for the Atari 2600 and 5200. Neither prototype was ever commercially distributed on its own, though they were included—more for novelty or history’s sake than enjoyment—in several of the Atari anthologies we detailed above. Both prototypes are largely unplayable, the 2600 version because of that system’s graphical limitations and the 5200 version because it lacked collision detection.⁸

Another prototype, *Abyss*, programmed by retro-game creator John Dondzila in 1999 for the Vectrex home console, also went uncompleted and unreleased.⁹ According to Dondzila (2013), he “was unhappy with the look and feel” of his game, an assessment partly dictated no doubt by the fact that while the Vectrex was a vector-based machine, its input was stick-not spinner-based.¹⁰

Long before any of these home console prototypes existed, however, arcade machine hackers—often coin-op machine service technicians or hands-on arcade owners and managers—had developed a number of their own prototypes and hacks that were built directly over and into the original *Tempest* machine’s hardware. Duncan Brown, a co-owner of the 1980s-era Professor Fether’s Arcade in Charlottesville, Virginia, for example, reverse engineered *Tempest* in 1982 to create the now famous (within the collector community at least) *Tempest Tubes*, which added new—and more difficult—levels to the game. This hack circulated among arcade operators, though for obvious reasons without Brown’s name attached. In 1998, Hasbro/Digital Eclipse identified and tracked down Brown and, as Brown tells it, surprised him by asking—instead of pressing charges—if his hack could be included on the company’s 1999 *Atari Arcade Hits: Volume 1* disc, for which he would be paid \$1,000.¹¹ While Brown had performed a brute force hack—exposing the code byte by byte—to allow him to create new tubes, Simon Mills took a different approach. In 2000, Mills created *TempEd*, a full-featured tube editor for *Tempest* that allows anyone with the gumption to design new tubes, add them to the game, and play them in an emulator.¹²

Finally, there is Clay Cowgill’s *Tempest Multigame* (1999), a boon to the

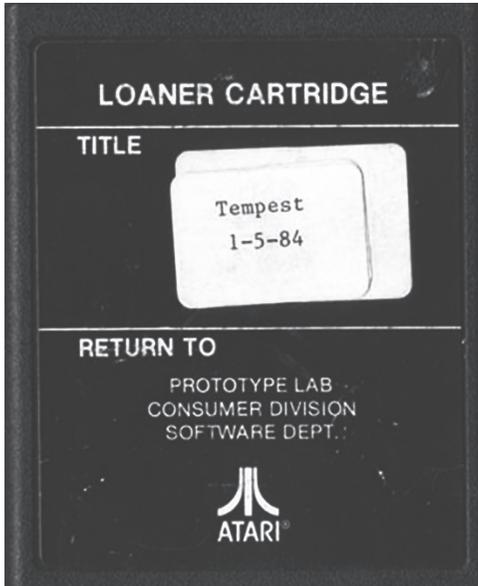


Fig. 19. Atari *Tempest* for 2600 prototype cart (Image used by kind permission of Matt Reichert, atariprotos.com.)

Tempest collector because it combines all three authorized system updates—known as “Revision 1,” “Revision 2,” and “Revision 3”—with Theurer’s two prototype designs, *Aliens!* and *Vortex*, plus Duncan Brown’s *Tempest Tubes* and two of Cowgill’s own titles, *Vector Breakout* (1999) and *Vector Breakout Plus* (1999). All nine games are selectable from *Tempest Multigame*’s start screen. Unlike the Atari arcade game anthologies we listed earlier, *Tempest Multigame* was actually a modification kit for the *Tempest* arcade machine itself. Comprised of a mezzanine board that plugged into *Tempest*’s main integrated circuit board, a Video RAM expander board, and two integrated circuit sockets, the kit allowed *Tempest* machine owners to directly deploy the full history of the game within a single cabinet—useful for collectors and archivists alike. Cowgill first offered his kit for sale on the web in 2000 for \$109.00 but soon thereafter raised the price to \$129.00, where it stayed until he stopped making it in early 2007.¹³ It is here especially, among the mundane details of making, distributing, and buying post-release *Tempest* prototypes and hacks—some legal, some not—that some of the game’s most devoted fans are most readily detectable. These are the players who loved the game so much that they wanted it to be more than it was—and made it so. With the exception of the addition of new tubes, Theurer’s original design was left more or less untouched. But as the video game market picked

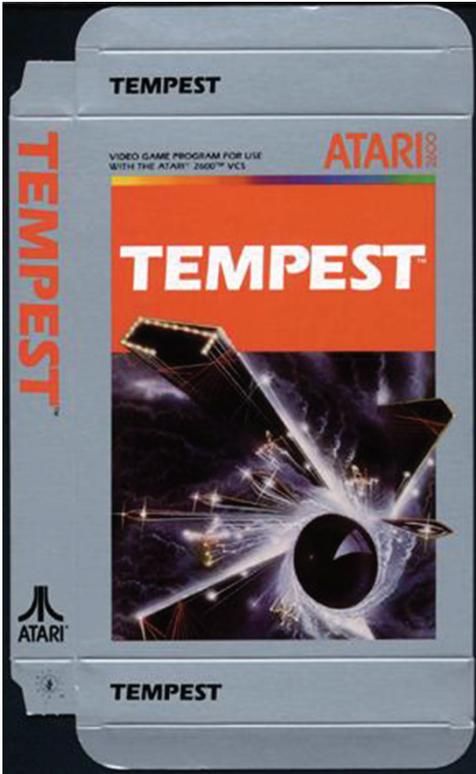


Fig. 20. Atari *Tempest* for 2600 prototype box art (Image used by kind permission of Matt Reichert, atariprotos.com.)

up after the 1983–84 crash, and as consumer tastes in video games became more sophisticated (or at least more accustomed to play-based spectacle), Atari and its various stakeholders sought new ways to convert their once prosperous properties into expandable franchises that would not only further energize the value of the original intellectual property but also grow them through licensed clones and sequels.

Clones and Sequels

Just as today, the proliferation of software duplicates in gaming's early history was rapid and frequently unauthorized. The rundown of prototypes and hacks in the previous section illustrates this in part, but another piece of the ecosystem involves more polished and, if not authorized then at least legally ambiguous, clones and sequels. A “clone” is a software imitation that is just different enough from the original to provide legal protection from

intellectual property infringement proceedings. An early example from *Tempest*'s history is GCE's *Bedlam* for the Vectrex. Released in 1982, less than a year after *Tempest*, *Bedlam* had players firing a cannon at approaching enemies inside a series of changing geometrical vector forms.¹⁴ It also had a "Zap" button that would destroy all enemies currently on the screen. Unlike *Tempest*, however, *Bedlam* places the cannon at the center of the forms, with the player seeming to look down directly from above rather than from an oblique angle. Moreover, while the player can rotate the cannon, it is fixed in the center of the screen while the geometric shape itself rotates. In this respect, *Bedlam* builds on one of Dave Theurer's early concepts for *Tempest*, that is, to have the tube rotate instead of the player's avatar.¹⁵

Although the first authorized version of *Tempest* became available for the Apple Macintosh in 1993 with the release of *Microsoft Arcade*, desirous Mac users had been playing the game—or a reasonable approximation of it—for nearly two years by then. In 1991, a freely distributed *Tempest* clone called *Arashi* (which means "storm" in Japanese) had been developed by Project STORM Team and then shared among gamers using electronic bulletin boards, university and corporate computer networks, and the so-called sneaker net (i.e., putting the game on a floppy disk and walking it over to someone else's computer).¹⁶ *Arashi* ran under Mac OS 6, and apart from its sounds and decidedly different attract mode and high-score registration screen, looked quite similar to *Tempest*.

MacAttack, another *Tempest* clone for the Mac written by Roger Kemper, was released sometime between 1993 and 1995 by New Reality Entertainment. Using fully shaded tubes (as opposed to simple wireframes) and a settings interface specifically designed for Mac users, *MacAttack* draws on the metaphor of the "Net" infected with marauding "viruses" to motivate player action. While the game is clearly derived from the *Tempest* gene pool, virtually all of its details differ from the original: the style is 3-D sprite-driven, the available playfields are all minor variations on a flat plane, the sounds are different, and there is a much greater variety of enemies—including a huge levitating AI robot at higher levels.

Although the Mac community's interest in *Tempest* seemed to be waning by the late 1990s, and Atari was in the throes of salvaging what it could of its principal properties at the turn of the millennium, retro programmers began to take up the challenge of home brewing a *Tempest* clone for the most obvious game console for such a title, the Vectrex. As we explained earlier, John Dondzila's 1999 title *Abyss* was an unfinished project for the long since abandoned vector-based system licensed and distributed by

Milton Bradley. Two years later, however, Christopher Tumber released a complete and working *Tempest* clone for the Vectrex called *Tsunami* (2001). While it lacks the color and sound of the original, and the collision detection is a bit inconsistent, *Tsunami* offers a reasonably good visual approximation of *Tempest*.

Even as these hacks and home brews were being created, a number of other small developers had obtained the rights to produce legal sequels to *Tempest*. In 1994, Jeff Minter—founder of Llamasoft—wrote *Tempest 2000*, a more stylized and acoustically rich game than the original, but one still ludically familiar. The game was developed for Atari’s recently released (1993) Jaguar system, but given its initial positive reception by reviewers (and the Jaguar’s less positive treatment by game industry pundits) it was soon ported to other systems, including the PC, Mac, PlayStation (enhanced and renamed *Tempest X3*), and Saturn.¹⁷ *Tempest 2000* introduces many new tube shapes, as well as numerous new play mechanics: power-ups, a variety of weapons, a jump feature that enables players to momentarily launch the shooter off the near end of the tube in order to avoid enemies that have made it that far, and an “A.I. Droid” helper that adds to the player’s firepower. It also includes a game save feature allowing players to pick up where they last left off, and paradigmatic game balance and point mechanics. A critically acclaimed techno soundtrack completed the package, and the game went on to win *Electronic Gaming Monthly*’s 1994 Jaguar Game of the Year award. Admittedly, the competition was hardly stiff; among the sixteen Jaguar games released in 1994 were *Evolution: Dinodudes*, *Brutal Sports Football*, and *Checkered Flag*, all of which have been heralded as among the worst games to be released for the system. In fairness, however, *DOOM* and *Wolfenstein 3D* were also released that year for the Jaguar, but the former had already been out for a year on other systems and the latter had been out for twice that long.¹⁸

The PlayStation version of *Tempest 2000*, called *Tempest X3*, deserves attention all its own. Released in 1996, a full two years after Minter’s remake, *Tempest X3* is, as video game critic Stuart Campbell puts it, “almost as different from *Tempest 2000* as *Tempest 2000* was from the original *Tempest*. The core gameplay might be the same, but there are so many extras, and so many changes to existing elements, that to all intents and purposes it’s a whole new sequel rather than a slight update” (“Reap the Wild Wind,” n.d.). As Campbell rightly points out, *Tempest X3* is far more expansive than *Tempest 2000*, sporting numerous new tubes, hidden modes, tweaked graphics and animations, new enemies, and improved game balance. And

yet, the game received very little press, perhaps because its developer, Interplay, was better known for its *Star Trek* properties, not its action-shooters. In any case, *Tempest X3* clearly benefitted from the boost in power that the PlayStation's superior hardware lent the game, so much so in fact that the game continued to be popular on the PlayStation 2, which was backward compatible (i.e., the PlayStation 2 can play PlayStation games).

The advantages of increased hardware power are clearer still when one compares all of the titles in *Tempest 2000*'s lineage thread: 1994's *Tempest 2000*, 1996's *Tempest X3*, 2001's (oddly named) *Tempest 1000*, and 2006's *Typhoon 2001*. This latter title, coded by German programmer Thorsten Kuphaldt and released as freeware for Windows and Linux, occupies a liminal space between clone and sequel. Many of its features are duplications of Minter's *Tempest 2000*, from the shapes and distinctive movements of the tubes (called "webs" by Minter and other post-*Tempest* designers), to the types of weapons, power-ups, and on-screen action hints (e.g., "Collect Powerups!"). Indeed, so similar are these key elements that Kuphaldt commented in a 2007 interview in *RGCD* (Retro Gamer CD) that "Jeff [Minter] initially was not exactly happy about me developing the game, but his position is quite understandable if you know the back-story behind other remakes and ports of *Tempest 2000*."¹⁹ Despite its strong similarities, however, Kuphaldt's remake is quite distinctive from Minter's version released some dozen years earlier. Perhaps most striking is the smoothness of its animations and clarity of its graphics—no doubt due in part to the superior hardware that *Typhoon 2001* ran on, as well as its use of OpenGL, a high-performance application programming interface that enabled Kuphaldt's game code to utilize the power of the specialized graphics processing units contained in most mid-2000s-era Windows and Linux machines. Also notable, however, is the game's built-in level editor (briefly discussed earlier), which enables players to create and integrate new "webs" far more easily than any previous version had allowed, including *TempEd*.

It is a telling detail that Kuphaldt opted to remake Minter's 1994 *Tempest 2000* rather than Minter's 2000 *Tempest 3000*, which was technically only the third *Tempest* sequel. This latter title, to date the last Atari-licensed version of *Tempest* (not including ports of Theurer's original game for new systems, the Internet, and so forth), was developed for a consumer technology just coming to market and one that many electronics industry observers had high hopes for. NUON was a chipset, operating system, and programming platform designed by VM Labs—founded by former Atari vice president Richard Miller—in the late 1990s and released for production in

1999. It was developed with a vision that saw DVD players (within which NUON would piggyback) becoming the primary entertainment console in the home. NUON would not only enhance the playing of movies and other conventional digitally recorded content but would also make that content more interactive (e.g., smooth scanning and search features, 20x zoom) and provide a platform for high-end gaming (one early promo showed Mario's hat [of *Super Mario Bros.* fame] sitting in a puddle of blood, intimating that the system was going to finally unseat Nintendo in the video game marketplace). It would even allow for Internet browsing, e-mail, and video conferencing (Nuon.tv 1999). With *Tempest 3000*, Minter (a major contributor to the development of the NUON system) extensively updated his previous sequel, but reviews of the game were mixed. Boasting, as usual, new levels, new enemies and enemy behaviors, and impressive new sounds and graphics, *Tempest 3000* was enthusiastically admired by some gamers who were captivated by what can fairly be called the game's revelry in pandemonium: wild colors, unrelenting and unpredictable enemies, an intense soundtrack, and maddening (even taunting) sound effects. Other players found these same qualities to be infuriatingly confusing and complained that the NUON's controller and lack of a save system were retrograde, not the new apogee of home gaming (Campbell, "Blowing Hot and Cold," n.d.; Papercut 2005).

In 2003, three years after Minter's NUON sequel, a German company named Apocalypse released an unauthorized clone known as *Tsunami 2010*.²⁰ Though the game received meager attention by the media—press reviews included little more than a screenshot, and a link to the Apocalypse website appeared in *Edge Magazine* and *PC Action*—it did include a facelift, the ability to use one's own CDs as the soundtrack for play, and a few other modest changes from *Tempest 3000*. Despite *Tsunami 2010* being a competent and even enjoyable clone, however, Minter's ability to write code that can generate spectacular visuals and deploy them effectively in a game has proven tough to imitate. Indeed, a comprehensive review of all known *Tempest* clones, hacks, revisions, and sequels to date suggests that the only designer capable of outdoing Minter is Minter himself. In 2007, along with colleague Ivan Zorzin at Llamasoft (the development studio Minter started in 1982), Minter released a new *Tempest* homage, one that again exploded with color and sound.²¹ *Space Giraffe* was released in August of 2007 on Xbox Live Arcade and a year and half later (December 2008) for the PC. The game's name refers to what Minter renamed the original *Tempest* shooter after conducting an informal poll about it on a Llamasoft web

board. The game's design could arguably be called *Tempest's* apotheosis and unfailingly elicits comments from players and spectators alike who wonder what kinds of "design aids" Minter and Zorzin were ingesting when they created the game. Awash in multiple ever-shifting palettes, *Space Giraffe* has an almost unrivalled surreal quality. Not unsurprisingly, *Space Giraffe* received mixed—"polarized" would be nearer the truth—reviews, with all but the most tenacious players condemning the game for its cacophony of color, action, and animation that make gameplay exceedingly challenging (see Gerstmann 2007; Reed 2007; Gillen 2008).

The initially overwhelming feeling in this game where confusion is a primary play mechanic is often a difficult one to overcome, even for seasoned players. Yet *Tempest* produced a similar sense of confusion and anxiety in its day. That said, *Tempest* was no visual riot like *Space Giraffe*—on the contrary, its spare play field and stark vectors were monastic in comparison to many other arcade games. Arguably, after nearly three decades of naturalization to the extravagances of video game development, the prospects for evoking in players that same sense of confusion and anxiety are now narrow. It takes far more to disconcert 21st-century gamers than it did when Theurer was coding his nightmares into Atari machines. From this perspective, *Space Giraffe* is perhaps the truest *Tempest* homage to date, approximating in modern gamers the mental and haptic pandemonium that *Tempest's* very first players experienced.²²

A lacuna opens here in what might be termed *Tempest's* "afterlife." It was precisely the game's simplicity and abstraction, combined with the relentlessly industrial invasion from the bottom of the tubes, that created the ludic chaos that players loved or hated (or both) about *Tempest* in 1981. That same minimalism has also ensured that *Tempest* stays *Tempest*, which is to say that the game is so spare that it takes very few changes to its mode and presentation to make it not just another game but an entirely different genre. This, we contend, is what anchors the game so immovably to its originary moment, and also what dooms its potential to become that most valuable of commodities, the forgettable progenitor. Who thinks of *Duck Hunt* (1984) when playing *Halo 4* (2012) or *Haunted House* (1982) when playing *Resident Evil 6* (2012)? Generally, only video game archivists and historians. For game publishers, mercurial archetypes such as the first-person shooter are money in the bank because they establish a look and feel for gameplay that can take innumerable forms. Load up *Space Giraffe*, on the other hand, and anyone with even a basic familiarity with retro gaming or arcade culture will instantly identify it as a *Tempest* knockoff despite its

audiovisual squall and Llamasoft's objections to the contrary.²³ Brand solidity is brilliant to a point, but while the value of a universally recognizable brand can seem limitless, it is so only as long as consumers stay interested in it. Once the glister fades, the brand wanted by consumers everywhere becomes overnight the brand they are dead-set against. This is the *Tempest* paradox: its striking aesthetic flash-froze it into history, never forgotten but never freed.

There are a number of other games that, while they resemble *Tempest* or one of its authorized sequels, are decidedly distinct from the original. Fitting into a category generally labeled "tube shooters"—a term that originates with Theurer's progenitor of the species—these games tend to involve shooting at objects emerging from the bottom or vanishing point of a three-dimensional tube shape and moving toward the player's avatar. Examples of tube shooters include (among many others) *Buck Rogers: Planet of Zoom* (1982), *Gyruss* (1983), *S.T.U.N. Runner* (1989), *Hyper Zone* (1991), *N2O: Nitrous Oxide* (1998), *iS: internal section* (1999), *Sewer Shark* (1992), *Rez* (2002), *GyroStarr* (2008), *Child of Eden* (2011), and *Dyad* (2012). Games such as these, some released mere weeks after Atari's original *Tempest* while others are being developed even now, signify the tenacity and appeal of Theurer's concept, which no doubt has itself yet deeper origins and influences than we can trace here.

Having surveyed *Tempest*'s post-release impact within the game development world, we draw to a close this excursion into the game's afterlife with a brief look at *Tempest* beyond games. This world, which we call *Tempest-iana*, is perhaps the brightest beacon signaling *Tempest*'s enduring spark.

Tempest in a (Literal) Teapot

In the Learning Games Initiative Research Archive, there are thousands of games, hundreds of game systems and peripherals, and all manner of academic and trade books about the craft of video game design, development, and criticism. Despite this cornucopia of wonder, however, there are three display cases in particular over which the Archive's many visitors linger the longest. More or less artfully displayed in these cases is a small sampling of the Archive's collection of video game crafts and *objets d'art*: a piece of lumber with a scene from *Pac-Man* airbrushed onto its rough surface, an eerie Super Mario decoupage onto a light switch cover plate, a US quarter crushed and imprinted with the face of astronaut and legendary game and

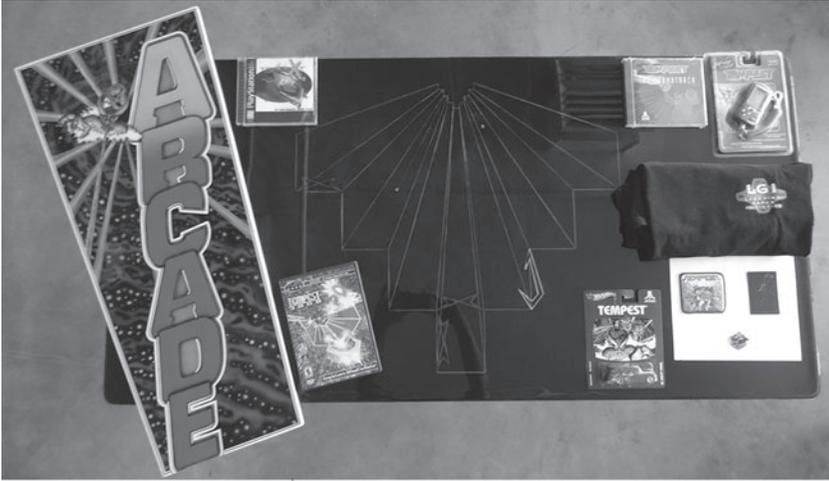


Fig. 21. Atari *Tempest* arts and crafts (Tempest © 1981 Atari Interactive. All Rights Reserved. Tempest is a trademark owned by Atari Interactive, Inc. Use of Tempest images and trademark are provided under license by Atari Interactive, Inc.)



geocache designer Richard Garriott. These are the artifacts of fandom, the markers of devotion, and the badges of commitment that lend a soul, so to speak, to the games they honor. The crocheted *Tetris* refrigerator magnets, the handmade bar of soap shaped like an NES controller, the garage-built *PONG* machine housed in an Altoids tin—handmade memorabilia such as these function as both media and receptacles, connecting one player to another through a kind of post-arcade memorial link across time and space, while simultaneously storing in the artifacts themselves the sweet nonpareil of hours spent at play.

Among the densest collections of gamic craftwork the Archive holds

is the one that constellates around *Tempest*. In fact, it was this amalgam of non-digital but digitally referential curios that prompted us to write this book in the first place. As archivists and new media scholars, we wanted to better understand what sort of game would have the power to inspire painters, tilers, woodworkers, basement hobbyists, and kitchen table crafters of all stripes to spend their time, talent, and treasure paying their respects to an arcade machine and the game it enables. From lagniappes as simple as a homemade button boasting a laminated *Tempest* screenshot, to a “*Tempest Junkie*” T-shirt, to Intrepid Otter’s hand-dyed wool yarn matched to the color of *Tempest*’s electric blue vectors, to Rosemarie Fiore’s photographic artwork “*Long Exposures of Video War Games*” that includes a spectacular rendering of a complete game of *Tempest* in a single image, each of these tributes recollects and shares forward an experience of engagement, luck, skill, frustration, patience, and captured imagination. This is *Tempest*’s life after the decline and fall of the western arcade, and it is the gamer’s life, too, after the selfsame decline. Through hacks, clones, remakes, and sequels, as well as through embroidered patches and lovingly framed cabinet art, *Tempest* lives on not just in players’ memories but also in their fingertips, fashions, films, and furnishings.

And, of course, in writing and research. This book seeks to answer, in part, the question “*Why remember Tempest?*” and in chapter 5 we summarize the highlights of that answer as we have traced it over the course of the preceding chapters. However, we also mean for this book to be our own crafty approbation, more verbose (to be sure) than a *Tempest* tube-shaped ocarina but just as earnestly and delightedly done.