SPI 72: Physical Systems Design in Conflict Simulations

by Redmond A. Simonsen

In the past year, the Art & Production Department of SPI has been involved in almost two dozen major game projects. It has been in this year that SPI products have taken on a matured, highly developed "look" and expressed a definite point of view with regard to the design of physical systems in games.

Physical systems design is composed of two elements:

1. Formatting, integrating, and displaying game information.
2. Providing a congenial physical environment for the game design and the play of the game.

The foregoing may sound like a pretentious over-technicalization of a basically straightforward, uncomplicated activity. It is not. In fact, one of the measures of success of a physical system is its *apparent* simplicity, and unobtrusiveness. Good physical design is like tactfulness: you only notice it when it isn't there. And just as the substructure of fact is built on a complex set of relationships and considerations, so too is physical design of a game.

FORMATTING

"You saw it before...well, here it is again."

One of the greatest advantages in designing in the conflict simulation genre is the fact that there are major points of similarity from one game to the next. This allows the systems designer to create formats into which different games may be placed. This is beneficial simply because it reduces the learning task given to the player. It also provides the artist with modularized "solutions" to mundane layout problems (if every new game had to be designed from the ground up, SPI would produce about four games a year instead of twenty-four).

Formatting the Rules: "Speak right, think right" is a pseudo-Orwellian phrase I'm rather fond of using on my co-workers. What it means is that if consistent, logical use is made of a simple but specialized rules-language, then the chance of error and contradiction

Thinking It and Doing It —

Except for those of you who might work in the graphic arts, there is a general ignorance as to how a game is physically designed, executed and produced. Some people seem to think that we just think beautiful thoughts all day long and simply phone them in to the printer who casts a magic spell over a pile of paper and *voila* — a game!

If only it were so.

Step 1 — The game developer delivers the rules manuscript, counter-mix, and rough playtest map over to the Art Director (sometimes this handover occurs piecemeal). Many times there is a Step Zero, in which the game developer or designer consults with the AD in advance concerning special problems and pecularities in a given game.

Step 2 — The AD digests the game (and sort of plays it out in his mind) in an attempt to discover the proper approach to use. As he reads the rules, the AD loopholes them and, hopefully, catches any omissions or lack of continuity. At this point he also decides the format to be used for the various tables, charts, map symbology, scenarios, etc. The manuscript is "spec'ed" for type and handed to the typesetter.

Step 3 — The main text of the rules is set into type (using a direct keyboard, phototypsetting machine — which means if the typesetter makes a mistake on the copy, that piece has to be set over again).

Step 4 — The raw type is proofread and corrected and turned back to the AD.

Step 5 — The artist will layout and execute the rules (meanwhile another artist may be executing the map and/or the counters). This is perhaps one of the least understood stages of production. What the artist is doing is locating and fitting a number of diverse elements into a limited space (a rules folder, a map, a counter form). Each title, each separate column of type, sometimes each individual character of a word, is pasted down by hand on a piece of illustration board. All of these elements must be "square" i.e., lined up properly, usually parallel to the page. If type is out of line by a few hundreths of an inch, it will look strange and disturbing to the eye. All of the elements must be placed in proper spatial relationships, or else the reading continuity may may be destroyed. The final, finished piece is called the "mechanical." It looks very much like a printed piece, except that every element is obviously pasted on board. Whenever a portion of the artwork is to appear in a different color or a different value of the same color, it is "separated" onto an acetate overlay hinged to the main board. A typical map will have four such overlays, each of which must register (precisely match into) the main board.

Step 6 — The mechanicals are proofread and corrections are made (you can always find something wrong with a job as complex as a game).

Step 7 — The mechanical is turned over to the camera house where a high quality photographic negative is made of each board and overlay. Most of the time a "blueprint" positive paper copy is made from this negative in order that the job may be proofed again.

Step 8 — The printer takes the film negatives, retouches them, strips them up on registered forms, and "burns" a metal printing plate from them. This is an exacting, technical step which is critical to the final appearance of the job.

Step 9 — The metal plates are attached to the press (our printer has a two-color press which means that the blue plate and the black plate on a map can be printed at the same time). The printer carefully adjusts his press and runs a few trial sheets through it to check out the job. Once the job is running, the sheets of paper will go through the press at a rate of 8,000 per hour.

Step 10 — The printed sheets are delivered to the binder, who folds, staples, perforates and sorts the job according to the instructions of the printer and the AD. If the sheet is a set of counters, it goes to the die-cutter's where it is mounted on cardboard, and then struck by a hand-made, steel die. This also is a very exacting process. The die-cutter we now employ (we switched in mid-year) is probably one of the very best in the nation; certainly the best involved in cutting game counters. There is only a 1/16" tolerance in a ½" game counter and our die-cutter has a remarkable accuracy rate.

Step 11 — The various pieces are sent back to SPI and assembled into finished, boxed games. This is the point at which the AD swats his forehead if he overlooked anything in Steps 1 through 10.

So as you can see, each game is composed of hundreds of little pieces coming together to make an integrated whole. There are dozens upon dozens of operations and sub-routines involved in each job. One of the objects of all this activity is to make it look like no sweat at all.

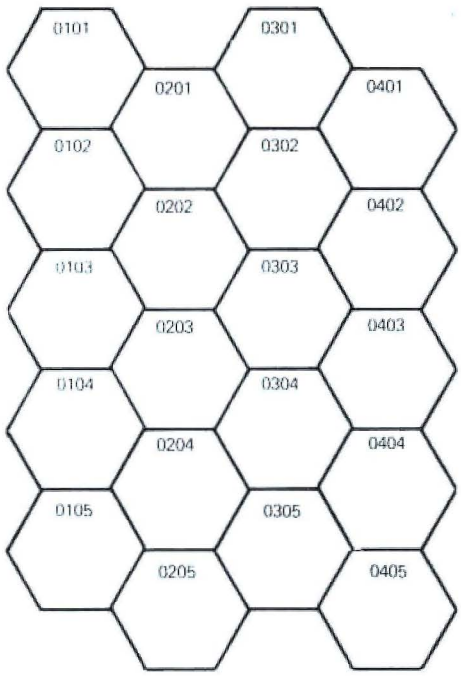
occuring in a given set of rules can be minimized. For instance, if the Game-Turn is always referred to as the *Game*-Turn and never simply as the "turn" then the chance that it can be confused with the Player-Turn is obviated. If in every phrase of the rules, specific labels are used for specific actions, occurring in specific sequence, then they will form a program which the game-player will have difficulty "loopholing" or misconstruing. Of course, there will never be a perfect set of game rules, simply because whenever thought travels through the filter of language some of the original intent of the rules write must inevitably be lost.

Another element in the optimization of rules formatting is the arrangement of major rules elements in a consistent order, usually echoing the order in which the general action of the game will occur. Within major rules elements, the format is reiterated by stating the General Rule, then the Procedure for implementation and finally the specific Cases which spell out the "legal" details of the rule. I recently superimposed a major modification upon this basically good system: the decimalized numbering of rules sections in a fashion similar to numbering of military regulations or library books. Under this system each set of game rules is headed by a comprehensive outline of every element of the game. This system aids the player in the identification of specific passages in the rules. Also, by its very nature, it forces the rules writer to more formally organize the rules into a cohesive body of information.

Formatting the Maps: In this game element perhaps the furthest one should go in the direction of standardization, is the use of certain common terrain symbols from map-to-map, the use of standard sheet sizes, and (in most of our games) the employment of a computer generated hex-grid as a base. The selection of a single type of colored paper (Mohawk Vellum, "Sandstone") might also be considered as a format.

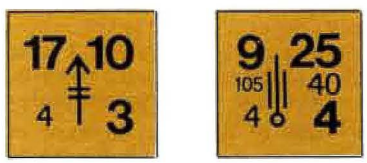
A new grid numbering system which we've developed shows a great deal of promise and may well be a standard feature on all future SPI maps. I first used a numbered hex grid on the *USN* map (*S&T* 29) and it worked very well. It was a consecutively numbered grid, however, and this caused problems when attempts were made to employ the same system on other maps with differently proportioned hex fields (the consecutiveness of the numbers would be destroyed if you cut off the bottom of the field). The same system was used in the *France, 1940* map that we did for Avalon Hill. The grid was effective, but once again there was the tedious mechanical problem of preparing a consecutively numbered grid which would work only for that particular hex field.

The same problem appeared again in the development of the *Breakout & Pursuit* map. There was a requirement to identify each individual hex for set-up purposes and the field was a huge one (21" x 34"). I didn't feel like having the Art & Production Department slave over a giant custom-made hex field that could only be used for a few games. At this point, Arnold Hendrick (the game developer) came up with an elegant solution: treat each file of hexes as a semi-independent entity, starting the numbering over for each new file. Together we decided that a four-digit number in each hex would be best: the first two digits identify which file of hexes you're in and the second two identify the exact hex in that file. The beauty of the system is that the grid can be cut off on the bottom and/or one side without destroying its integrity (and the same master can be used over and over again regardless of the shape of the hex field). This same numbering system can be applied to any game already in print (and I feel it is definitely superior to any of the clumsy coordinate systems now in use).



A section of the new, standard grid-numbering system.

Formatting the Counters: Most counters are of the typical two-value-plus-operational-symbol variety. Choice of basic typestyle is the primary problem. I've settled on a type called Helvetica Medium as the standard, switching into a square serif face (Clarendon Medium) for a pre-twentieth century flavor when it seems appropriate. This past year I've finally laid hands upon a good reference source for tactical symbols (see *MOVES* 3) and we've generated our own custom styled versions of the symbols for use in our games (see *Soldiers* and *Red Star/White Star*).



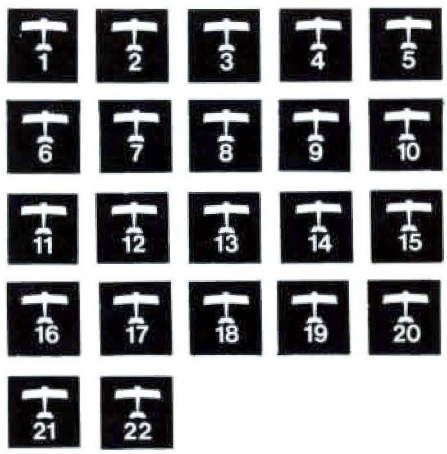
(Above) two typical *Soldiers* counters: a medium machinegun and 105mm howitzer. (Below) two typcial *RS/WS* counters: an M60 tank company and a 240mm mortar unit.

INTEGRATION AND DISPLAY

My personal approach to (physical) game design has always concentrated on the idea that the game is a paper machine meant to assist the player in acting out a simulation/fantasy. Towards this end, the artist works to eliminate the wall of static that exists between the game designer and the game player. The game designer must deliver a situation (a "signal") to the player, the artist must provide the delivery system.

Given this problem, the best thing an artist can do is to so integrate the graphic elements of the total design, that a very "organic" structure results. For example, in our *Winter War* game a terrific number of things had to be brought to the player's attention each Game-Turn, and there were all sorts of special terrain considerations. The solution was to hang many of the important operations directly on the Turn-Record Track and to display on the map itself as much of the special limitations and victory information as possible. In most cases the information is presented more than once, in different forms, in order to reinforce its meaning and memorability.

Another good practical example of this integration and display doctrine is the *American Revolution* game. Virtually every important piece of information is built into the map (harder to lose that way). Coding devices in the Regions allow the player to instantly assess the potentials of a given situation.



A complete set of Altitude Markers from *Flying Circus*.

The information problem in our first tactical air game, *Flying Circus*, was an especially interesting challenge. The part of the solution that I'm fondest of is that of using the Altitude Marker as the indicator of the aircraft's position, identity and type, thus eliminating the need for a clumsy dual or triple on-the-map marker system. Turning all the records-keeping devices on the game into marker/track systems is also a favorite "solve" of mine. There's nothing more tedious than to have to write something down or decipher my own handwriting during a fast playing game. If the operations in a game become too much like work, the acceptability of the game will decline. And since the play of conflict simulation revolves around the manipulation of information, the more effectively the information is displayed the more effective the "play experience" will be.

Much of the information to be manipulated is contained by the counters in a game. It's my feeling that (except for special situations like *Flying Circus*) as much information as possible should be presented directly on the face of the counter. *Red Star/White Star* is a good case in point. There are no less than eleven distinct pieces of information on each *RS/WS* counter. All these bits of data are easy to pick out and the individual counters still manage to look relatively "clean."

THE GRAPHIC ENVIRONMENT

At the beginning of 1972 it became economically and technically possible to do all our game maps in two colors. The addition of this second color (usually blue) improved the appearance of our maps and enabled us to use different approaches in graphic problem solving. Some of you have kvetched about the blue woods and so forth, but most have appreciated the additional clarity afforded by our use of color. The *1812* twin game was done in three colors in order to solve the complex boundary delineation problem in that game. We can't routinely do games in three (or four) colors mainly for economic reasons. I do, however, feel that a two-color map on colored paper can be just as effective, and in many ways more attractive, than a three- or four-color map.

Occasionally, people will ask me why I don't use glossy paper on the maps and counters. Reasons: (1) glare, counters with a glossy finish are unreadable at certain viewing angles commonly occurring in game-play; (2) economy, if we printed counters and maps on glossy stock we'd have to varnish them or else they'd smear like crazy. But even if I had the money, I wouldn't do it simply because of the glare problem. I believe that people feel glossy finishes are better simply because they've been conditioned by the commerical games they played in their childhood. "Shiny is nice..."but it doesn't add a thing to the functional characteristics of the game.

Another slightly annoying request I get from a small, but vocal, group is to color the counters in strictly accurate uniform colors (and a corollary to this, the demand from the "closet Nazis" to make all SS counters white on black). I don't accede to these demands for several reasons: Some are practical ones, such as the research involved, ink matching, the fact that the uniform colors of two opposing armies might be virtually identical, and the fact that in tactical games with several scenarios, it's impossible to cover all the combinations. Other reasons are doctrinal: I believe that gratuitous color or decoration hurts a game and that same-side counters should only be picked out in different colors when its necessary for play or an aid to sorting. In general, I partially agree with the sentiment behind relating counter color to uniform color and I do try to give you counters that have a nationalistic look...I just don't want to carry it to an absurd extreme. Oh, by the way, I did give you white on black SS counters this year (in *Breakout & Pursuit*) but that was only to make it easier to identify Kampfgruppen and their parent units.

Of course the biggest, most constant, and most valid lament we hear concerns our unmounted playing maps. This is almost purely an economic matter. Conventional folding game boards must be done in large quantities to be economically feasible and even then the additional cost would affect the retail price of our games. We *are* doing a feasibility study on a less conventional form of mounted map, but the results aren't in yet and won't be for some time. Speaking as a game player, I personally have come to prefer unmounted maps, but I'm aware most of you don't share my preference.

Another area of deficiency in most of our games has been the lack of sufficient illustrated examples of play. Now that our art staff situation has improved, this will be corrected (illustrated examples burn up a lot of staff time in their creation). I'd like to hear from as many of you as are interested, concerning what specific types of rules situations you feel are most in need of illustration.

Some of the reactions I've gotten over the past year deal with the area of personal preferences and "mood" in our art. As I've said previously, most "prettification" of game art runs counter to my philosophy. A moderate amount of period styling can be useful to "set the scene" for the game players, but if there's any chance that the "flavoring" might interfere with the game function, I'll avoid it. This attitude results in a highly "engineered" look in our games, but we are after all constructing a device (a simulator) to study history/indulge in fantasy/satisfy competiveness. In 1973, the other SPI artists and myself will be pursuing this basic approach, but we'll also be experimenting with new methods and "looks." You won't, however, be seeing any coffee-table games from us. We will, however, continue to give you what I feel are handsome, "optimized" graphic systems that effectively deliver the game for your use and enjoyment.

The Cast of Characters

In the past year the Art & Production Department had its share of the personnel crunch at SPI. People came and went, but finally I seem to have assembled a team of really professional people who can do a good dance to get you the finished products to sate your appetite.

Manfred F. Milkuhn (Co-Art Director) is an experienced professional with an extensive background in magazine design. He's been with us about a year and has made a terrific contribution to the quality and productivity of the Art & Production Dept. Manny is a longtime game player (in fact the first game I ever played was *Tactics II* against Manny).

Al Zygier (Senior Boardman) is a recent, and much needed addition to our staff. He has had extensive experience in graphic design and layout as well as illustration. He also is an avid gamer, which can't hurt.

Marsha Treiber (Typesetter) was recently kidnapped from the administrative staff at SPI. Everything the department does goes through her hands and comes out gold. Marsha has a background in copyproofing and publishing. Although she's not strictly a gamer, she has set about to discover what makes them tick in order to have a firm grasp on what she reads and sets.

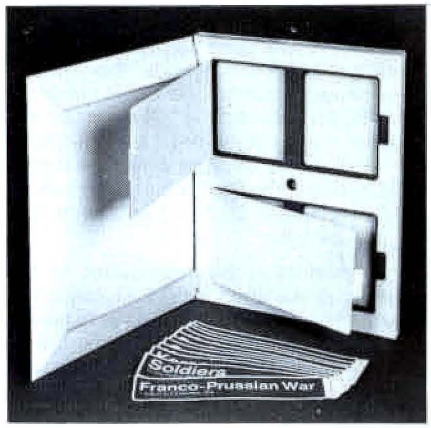
John Banks (Printer) works for Reflex Offset, Inc. but can honestly be considered part of our APD. He is one of the best (and certainly the most heads-up) printers I've ever been involved with. John is a true craftsman of the sort that is a rare find in this "I'm-all-right-Jack" world.

Other companies that conspire with us to do art are Freedman Die-cutting, N.Y., N.Y. and Apollo Bindery, College Point, N.Y., and Standard Folding Carton, Inc., Queens, N.Y.

Of course, when it comes to proofreading, copy managing, assembly, and follow-thru the larger cast of SPI cuckoos all dive in to make it wonderful and entertaining.

I'll place myself at the end of this list with all due false-modesty: *Redmond A. Simonsen* (Art Director) has been around from the start trying to hold the threads together on these various graphic wonderments. He used to design bookjackets and such before he flipped out and went into games. A very vicious game player whose game-time has been ironically pre-empted by work.

The Standard Game Box Mk. I, Mk. I½, Mk. II



This past summer saw the introduction of our so-called Standard Game Box, a 12"x15"x¾" white folding carton, with a compartmented corrugated filler. In most respects it's been well received and has improved the saleability of our games. In the Mk I box, however, some difficulty was encountered with the tab closures on the cover and on the interior hatches. Also, counters would occasionally slide between the corrugated filler and the back of the box.

Mk. I½ (recently received from the box manufacturer) has solved the tab problem and partially solved the disappearing counter problem, by slight readjustments in design. The Mk II, whose introduction is not yet firm, should solve all of the storage problems and will probably be the only package available truly designed for the gamer. The main change will be a multicompartmented, plastic tray in place of the die-cut corrugated now is use. It's birth awaits some final detail work and of course, the allocation of that all time favorite: money.

The three illustrated versions of the SGB (*Barbarossa, Leipzig,* and *Normandy*) have also been very successful leading some people to ask "Why not illustrate all the game boxes?" I'd love to, if I had the time and the money and the sales volume per title that could justify printing 10,000 of each box cover (that's the lowest run which is at all feasible). Since we only sell a few thousand of each title per year, we'd be stuck with a whole bunch of pretty boxes for a painfully long time. This will change as our audience grows and the volume of per title sales increases. Money is the handmaiden of Beauty, but Beauty don't go nowhere without first checking with the maid.