

the minimum rate (five per turn), while the rest of the industrial capacity is used to make mech points, which should be assigned to the farm or industrial sector. Remember that each mech point allocated to the farm will free one labor point to be transferred to some other sector.

Expansion is usually unnecessary and sometimes harmful in these early stages of the game. There is little to be gained by adding a new area, unless the region is deficient in some raw material. Each area annexed will require five consumer points, a transport point, and will yield only five labor points. These labor points will do more harm than good at this point in the game. In order to feed these points, they must be assigned to the farm sector, where they will eat every point they produce. More importantly, when the time comes to raise the social level, these points will require consumer points, which could possibly delay the improvement.

MIDDLE CONSOLIDATION

The period of consolidation comes between turns four and seven. The players have, by now, managed to stabilize their economies—starvation is not a major threat, the farm sector is well mechanized, and the industrial sector is able to produce both consumer and mech points in quantity. It is now time for the players to think about raising their social level. Because of the large number of consumer points involved, this task can be very difficult.

Before a player starts to raise his social level, he should have every sector in his economy fully mechanized. Otherwise, the increased social level will be worthless, since the real

purpose of increasing the social level is to increase the number of mech points allowed. Once all sectors are mechanized to the limit, the economy should be able to produce enough consumer points to maintain the increased social level, and still produce mech points to take advantage of the increase. When trying for a social level of three or four, players may find it necessary to raise the social level of the industrial sector before raising the level of the other sectors.

Again, expansion into new areas is not as important at this point as it will be in the final turns. However, if a region is short on some raw material, or if a player tries to box another into a small part of the mapboard, expansion may be required. There are ways to deal with such players, ranging from trade agreements to direct military attacks. The latter should be used with great care and only for short periods of time; players can hurt their own economy more than the other player's economy if they are not careful.

FINAL EXPANSION

The last few turns mark the great expansion of the four regions. All four should by this time have a social level of two or three, with all of the economic sectors producing at capacity. The time is now ripe for expansion, since now the players are able to use the new areas and the new labor points. Providing consumer points for the new labor will be much less of a problem now than in the earlier part of the game.

Raising the social level should still be the main objective, as it is worth more in victory points than adding new areas. There are a few things which will lower the victory point total, and these should be carefully avoided.

Starving labor points (if there still are any) must be fed and put back into the economy, as well as any unemployed points. Any military units must be disposed of by the end of the game, which means that the supply for these units must be cut off on turn nine. Demobilizing the military does not mean that attacks on other players must be stopped; in fact, attacks can be increased if other players are going to win. A combined attack with corruption chits and plebiscite attempts on other players' areas should be able to take at least one area, even more if other players join in the attack.

CONCLUSION

It would be nice to say that there are no flaws in *After the Holocaust*; sadly, this is not so. There aren't many out-and-out mistakes in the rules, but there are many which are vague and/or poorly written. The rules concerning strikes, research and development, and industrial employment/unemployment are the worst offenders in this respect. These rules require the player to make a judgment of what the designer had in mind.

Still, the few flaws in the game do not seriously affect the quality of the game as a whole. As a multi-player game, it is quite a success. Player interaction is an important part of the game, making diplomatic skills as important as military or economic prowess. The topic, background, and setting of the game are certainly interesting, and centering of the game around economic instead of military factors is very different from what wargamers have grown accustomed to. All things considered, *Holocaust* is one of the better games to be published for some time.

THE LIMITS TO GROWTH IN HOLOCAUST

by Gary M. Kodish

Most players of *After the Holocaust* must have wondered how high they could drive their Regional Level, given enough time and freedom from interference of other players. At first glance, it might seem that the only limitation is the number of sites of the most scarce commodity on the board, metal. It might also seem that there is enough metal so that a single player, if he controlled all the sites, and sufficient other resources, might attain a regional level of 10 or higher.

Alas, it is not so. The game system itself imposes a limitation on how high your Regional Level can be, no matter what your population is and no matter what resources or industrial capacity you command. And that limit is surprisingly low. The mathematics of the situation are quite simple: let P = the regional population, N = the Regional Level, S = the number of sites in any resource or industrial sector. Then to reach a Regional Level of N, you need to expend P(N-1)

Consumer Points per turn. To produce these, your industrial capacity must be:

$$\#1 \quad \frac{3P(N-1)}{5}$$

Your metal and fuel production must each be:

$$\frac{P(N-1)}{5}$$

This excludes fuel requirements for domestic transportation. With a use of minimum labor in the industrial sector (i.e., one labor point per site) and with your industry fully mechanized, the labor requirements in industry equal the number of sites, which is given by:

$$\#2 \quad S + SN = \frac{3P(N-1)}{5}$$

or,

$$\#3 \quad S = \frac{3P(N-1)}{5(N+1)}$$

Minimum labor required for fuel production, with the sector fully mechanized at level N is given by:

$$\#3a \quad S + SN = \frac{P(N-1)}{5}$$

or,

$$\#4a \quad S = \frac{P(N-1)}{5(N+1)}$$

The same is true for the metal sector, so that the total minimum labor requirement for both is twice (4a) or,

$$\#5 \quad S = \frac{2P(N-1)}{5(N+1)}$$

The total minimum labor requirement for producing the necessary Consumer Points for Regional Level N, excluding food requirements, is the sum of (3a) and (5), which is:

$$\#6 \quad \frac{P(N-1)}{(N+1)}$$

Now, since the minimum use has been made of labor in the other sectors, the remaining population is the maximum number which can be used in food production. Each turn, the player is required to produce P food points to feed his labor force and additional food points required in the production of Consumer Points. The total required to be produced at Regional Level N is:

$$\#7 \quad P + \frac{2P(N-1)}{5}$$

The labor force available to produce this food consists of the entire population minus those

[continued on page 25]

Arabs', particularly the Centurion. The best a T62 can do against a Centurion is a plus-2, unmodified only after four hex's range. At that range, the Centurion (or the M48/60's for that matter) can fire on a T62 at an unmodified plus-3. On a die roll over 3, this gives at least a D-1 result (50% chance of a result) as opposed to the 5 or 6 needed by the T62 (33% chance of a result). Essentially, this means that the Israelis can out-range any Arab tank unit. The only Arab counter-balance to this is the Sagger which will get an unmodified plus-3 against any Israeli tank out to its full 15 hex range. The only effective Israeli counter to the Sagger is the proper use of terrain, infantry, and artillery to protect his vehicles and suppress enemy units, especially when closing on an objective of any kind.

Artillery is one of the cornerstones of Israeli tactical doctrine. Israeli and Egyptian indirect fire can be shifted to cover different targets as often as necessary; the Syrian player must plot his fire at the beginning of a scenario and may not re-adjust that fire for the balance of the game. This difference in flexibility cannot be overemphasized. It means that the Syrians can plot only for his objectives, when on the offensive, and on a limited number of approaches to the Israeli's objectives. The Israeli can screen himself or the enemy with smoke or suppress tank and missile fire at almost any time. A normal Israeli tactic is to expose one unit in the hopes of getting the Arab to fire one or more of his missile units and show himself. Once the firing unit(s) is seen, the Israeli will hit it with smoke, if the target is a vehicle, or with tight-

pattern HE if it is an infantry team. This tactic is, of course, subject to how much indirect-fire support the Israeli has on tap in a particular scenario. Such fire usually means death for any Arab infantry dismounted in the line-of-sight of any Israeli unit. The Israeli can also protect the flanks of his forces with suppressive fire while his direct-fire weapons deal with the Arab forces blocking his advances.

As a rule, the Israeli player cannot take any unjustified risks while on the defensive; he has too few units to spend any of them needlessly. He should be a lot less cautious when on the offensive, however. While he will usually have plenty of time to reach his objectives, swift movement toward these points is still vitally important. Again, proper use of terrain and all combat arms is needed to keep casualties down. Smoke is the easiest way to get one's forces across the inevitable large stretch of open ground in any reasonably intact condition; running across these open spaces without the benefit of such cover is most definitely suicide if the defender is prepared.

The same general rule applies to the Arab player when on the offensive. He must cover his main advance (when possible) with smoke or the Israeli will cut him to pieces in short order. The Arab player can afford to take a few chances most of the time as he will almost always have enough units in any scenario to gain his objectives while taking fairly heavy casualties (which he will, against any reasonably competent Israeli player). The Arab player has almost a two-to-one advantage in several scenarios, and even the victory

conditions, while basically geographical in outlook, militate against the Israelis taking too many combat losses. Israel's manpower, after all, is at a premium, and some of their battle tactics are a direct cause of their casualty rates. These may be considered low compared to the Arabs', but when seen in the light of the overall reserves available to each side, it is pretty obvious that the Israelis must inflict casualties of at least three-to-one in order to gain more than a tactical victory. This assumes that the Israelis satisfy the scenario victory conditions to begin with; otherwise it is a moot point.

The nine scenarios give a pretty accurate account of the major clashes between the two opponents. They run from the opening battles of the war in the Golan and on the Suez Canal to the final Israeli counteroffensives in the same areas against the more-or-less prepared Arabs. Very rarely is a side given a disadvantage from which it cannot recover. What matters in this game is finesse, not sheer brute force. The Israelis need it due to the smaller number of units they are given in most scenarios. The Arabs need it because their higher panic level and lower weapons effectiveness offset their superior numbers. The campaign scenarios should generate a lot of interest among players for these reasons, and also, in the Egyptian campaign, neither side has any idea of what the opposing player is going to deploy in any of the three scenarios. In games like this, conservation of force—in reality one of the most important rules of warfare—finally becomes the rule rather than the exception.

Holocaust Limits [continued from page 13]

required in industry or resource extraction, or:

$$\#8 \quad P - \frac{P(N-1)}{(N+1)}$$

Given this labor force, if the food sector is fully mechanized, the maximum possible production of food points, assuming an average crop, is:

$$\#9 \quad P - \frac{P(N-1)}{(N+1)} + N \left[P - \frac{P(N-1)}{(N+1)} \right]$$

or, simplifying,

$$\#9a \quad 2P$$

The total food production must be equal to or greater than the requirement given in (7). Therefore,

$$\#10 \quad 2P \geq P + \frac{2P(N-1)}{5}$$

which simplifies to

$$\#10a \quad P \geq \frac{2P(N-1)}{5}$$

Readers will note that substituting any number 4 or higher for the Regional Level N makes inequality (10a) false. Therefore, no matter what your population or resources, nor how many Game-Turns you take, you cannot push your Regional Level higher than 3. In fact, the situation is slightly worse than the equations show, as we have ignored the labor requirement for transportation, which,

depending on the number of areas controlled, might significantly decrease the force available for agricultural labor.

Of course, the situation is not as bad as it seems either. These calculations were made for the case of a stable, self-supporting economy, with only average crops. A player might attain Regional Level 4 or higher for a period of time, if he has extremely good luck with his crops. Or if his economy generates enough cash, he might be able to buy the extra food he needs from another player at a lower Regional Level who has surpluses. However, all these possibilities are unstable. The only stable way to achieve higher growth is to use the Research and Development Option. A stable Level 4 economy can be achieved, for example, with a 60% production bonus in both metal and fuel. With care, using this option, there is probably no limit to what a player can achieve. Or is there?

FIREFIGHT ARTICLE ERRATA:

The MOVES 31 article on FireFight scenarios contained two errors which should be corrected as follow:

Scenario 2: under U.S. Forces Task Organization—Direct Support consists of **6 155mm**, not 12.

Scenario 5: under U.S. Forces Task Organization—Direct Support consists of **6 155mm**, not 2.

ANNOUNCEMENT

January 18, 1977

There is afoot at the moment a project for the formation of a Conflict Simulations Guild, to be a professional organization of persons associated with the design and production of simulation games and the media that cover this field. The idea originated at a small meeting which occurred at Baltimore during the **Origins II** convention of July 1976, and has been carried forward by a panel of regional co-ordinators since that time.

The Guild, according to the purposes outlined in its draft charter, shall exist to "promote high quality in simulation games, to aid the professional community in remaining in contact and aware of its joint professional interests, and to serve as a vehicle for the advancement of the state of the art in conflict simulation." A group of game people may form themselves on either an informal or formal basis, depending on community interest. Thus far, work has been carried on, in different sections of the country, by a group consisting of Frank Chadwick (GDW), Frank Davis (SPI), Rick Loomis (Flying Buffalo), Mick Uhl (AH), John Prados, and Jack Greene (formerly AH).

A meeting will be held at **Origins '77**, on Staten Island, as an open convocation of professionals who are interested in this project, for the purpose of discussing suitability and features of the proposals. It is hoped that this meeting will be widely attended by interested professionals.

For the co-ordinating panel,
John Prados