Persian Incursion

Israel and a Nuclear Iran

Simplified Strike Rules

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The designers of *Persian Incursion* are prepared to answer questions about play of the game system. They can be reached in care of Clash of Arms. *Persian Incursion* is part of the *Admiralty Trilogy* game system.

Introduction

Soon after *Persian Incursion* was published, the authors received several requests to radically simplify the military aspect of *Persian Incursion* so players could focus more on the game's political dimension. Many people interested in policy analysis and national decision-making found the air strike planning and execution part of the game to be daunting, and while they recognized Israeli air strikes are integral to *Persian Incursion*, they also felt the process wasn't very user-friendly. The level of detail required familiarity with air operations to use properly.

A related, but separate issue is that the strike planning process takes a lot of time, and this slows game play considerably. Both issues share the same root cause, a fairly high level of detail in the strike and air defense rules. While the strike rules are a simplified form of the current *Harpoon⁴* rules, the important tactical choices were retained, and going though all the options and decisions can be time consuming.

This highly simplified strike rules module removes much of the technical details, as well as truncating the strike planning process and air defense engagements. The goal is to dramatically reduce the time required to play the military part of *Persian Incursion*. However, radical simplification requires a bit of juggling to keep the game mechanics flowing properly. The necessary changes and their effects are highlighted, along with any modifications to the existing combat resolution process.

Note: These rules have not been playtested as thoroughly as the original game so that we can get them quickly to the people that want them. If you find any incosistencies or errors, use common sense to resolve them, and as always, please tell us about any problems, observations, or suggestions. These simplified rules are a response to player feedback, and we don't plan on stopping. We always answer our mail.

Summary of Rule Changes

- No Military Target Set. One of the tactical options available to the Israeli player was to target Iranian air defense assets: airfields, surface-to-air missile (SAM) sites, sensors, etc. With the radical simplification of the air strike rules, this option is no longer available. Some of the effects, such as suppression of enemy air defenses (SEAD), are folded into the modified rules.

- Abstracted Nuclear and Oil Infrastructure Targets. Infrastructure targets are no longer broken out by individual buildings. Primary and Secondary Target lists are now aggregated into two groups of hit boxes - damaged and destroyed.

Israeli and US strike aircraft are now listed with the expected number of hit boxes that they can destroy (see the Air Strike Attack Table on page 9). A 2D6 die roll per squadron provides the final combat result. This change largely eliminates the ability of a player to tweak the strike package or match weapons to targets. The only exceptions are the Natanz and Qom Primary Target lists that must be hit by heavy strikes (F-15I Ra'am and B-2) only.

To achieve a Tactical Victory all hit boxes in the Primary Target damage group must be checked off. A Decisive Victory requires all the hit boxes in the Primary Target damaged and destroyed groups to be checked off, as well as all of the Secondary Target damaged group. The Israeli player does not get any extra credit for completely wiping out each facility.

Consolidated nuclear and oil infrastructure target summary lists are provided on pages 10 - 15.

- Iranian Air Defenses. Iranian air defense engagements rigorously follow the node chart on page 24 of the Rules Booklet. All missile ranges and the beyond visual range (BVR) engagement zone chart have been eliminated. If a SAM system has not been suppressed or destroyed it can engage in the appropriate node. All anti-aircraft artillery (AAA) and all short range SAMs, except the Tor-M1 [SA-15] and the Pantsyr-S1E [SA-22] have been dropped. They almost never get a shot, and they have low effectiveness when they do.

The Tor-M1 [SA-15] and the Pantsyr-S1E [SA-22] are relegated to point defense, either protecting a longer-range SAM or a facility from attacks by precision guided munitions (PGM).

Air-to-air attacks now use an initiative die roll. If the Israeli wins, which will be most of the time, they get to shoot first. Any surviving Iranian or allied aircraft can then shoot. If the Iranian wins the initiative roll, both sides shoot simultaneously and any aircraft that are hit are removed. If the remaining aircraft continue to merge into a dogfight, both sides fire their dogfight missiles simultaneously. Losses are again removed before the strike is resolved.

As with the simplified strike model, all aircraft have a listed number of engagements with their probability of hit. Cross referencing the number of attacks with the probability results in an expected number of hits. Once again, a 2D6 die roll per squadron provides the final combat result.

The Air Data Cards can still be used with the simplified system, however, they are not required as a consolidated table of fighter air-to-air capabilities is provided on page 5.

- Upgrade Changes. The majority of the Iranian and Israeli Upgrades listed on pages 7 and 8 of the Rules Booklet were retained. Only two were eliminated outright, with a third being recommended. Some upgrades, however, had their effects defined more rigorously as a result of the elimination of the Military Target Set.

Iranian Upgrades:
- The R-27ER1 AAM upgrade is not valid with the simplified system, as it merely extended the engagement range.
- Bodyguard laser decoy and GPS jamming systems modifiers were changed to match the Air Strike Attack Table.
- High-fidelity decoys now provide a -20% modifier to the SAM suppression die roll. This is negated if Special Operations Forces (SOF) are assigned to attack the real SAM system.
- The advanced short-range SAMs, the Tor-M1 [SA-15] and the Pantsyr-S1E [SA-22], provide point defense for medium and long-range SAMs (-20% on SAM suppression die roll), or infrastructure targets (reduction in the number of expected hits).

Israeli Upgrades
- The AIM-120D AAM upgrade is not recommended with the simplified system, as it just extended the engagement range. The slight improvement in the probability of hit for

some air targets is not sufficient to justify keeping it. However, if players desire to use the Air Data Cards, the upgrade can be retained.

- The AGM-88 HARM Block 5 upgrade was dropped, as the SEAD mission was eliminated with the Military Target Set. Jam-resistant GPS receivers provide a redundant capability to the HARM upgrade.

- Jam-resistant GPS receiver upgrades to second generation GPS guidance no longer distinguishes between Israeli and US ordnance. The upgrade is for all weapons, and the cost is reduced slightly to 45 points.

Detailed Rule Changes

Changes to Chapter Three - Player Actions

3.5.2 Military Targets. Attacks by Israeli Special Forces remain unchanged, however, some of the effects of the attack has been modified to conform to the new air strike system.

- Weakening of the Iranian air defenses prior to a raid. Israeli SOF can attack any SAM system (long, medium, or short) in an attempt to destroy it before the raid arrives. If successful, that SAM battery is destroyed for the remainder of the game. The only exceptions being the Tor-M1 [SA-15] and Pantsyr-S1E [SA-22], which given their ability to disperse, can only have half the battery targeted and attacked by each SOF raid. If the raid fails, the Iranian player gets a +2 on the GCI Fighter Table for that Map Turn.

If high-fidelity decoys of the SAM system are present, the SOF will spot them during their attack preparations and report this to the raid commander. Even if the attack against the real SAM system fails, the incoming raid will still be aware of the decoys location. This knowledge negates the decoys' -20% modifier to the SAM suppression die roll.

- Spot to improve the accuracy of airstrikes. This action now only applies to infrastructure targets, and it increases the number of potential hits due to improved targeting.

The Israeli player must declare the SOF's target facility and make a die roll for the spot. If successful, each attacking squadron receives a one column shift to the right on the Air Strike Attack Table.

- Finishing off a damaged building remains unchanged. If SOF make a successful attack, check off D6/2 boxes at the targeted facility. This attack *can not* be used against the Natanz and Qom Primary Target lists (both damaged and destroyed groupings).

- Attacks against undamaged buildings remains unchanged. If SOF make a successful attack, check off D6/2 + 3 boxes at the targeted facility. This attack *can not* be used against the Natanz and Qom Primary Target lists (both damaged and destroyed groupings).

Changes to Chapter Five - Combat

1) The Israeli player plans the mission. Israeli aircraft now have four distinct tasks:

- Strike: These aircraft are carrying air-to-ground ordnance to destroy infrastructure targets.

- Escort: These aircraft are outfitted for air-to-air combat and provide dedicated fighter cover for a particular strike.

- Fighter Suppression: These aircraft are assigned to disrupt the Iranian air defense sector's ability to send fighters against incoming raids. The aircraft are NOT part of the strike package and affect only those tactical air bases in that sector. The Fighter Suppression Table and die roll are unchanged.

- SAM Suppression: These aircraft are assigned to disrupt SAM batteries, and prevent them from firing at the strikers. With the elimination of the dedicated SEAD mission, all SAM types, long, medium, and short-range may now be suppressed in this task. The SAM Suppression Table has been changed to the following:

Chance of Success:
　　2 aircraft: 70% base
　　4 aircraft: 95% base

　　Modifiers:
　　Advanced SAM system:　　　　-25%
　　High-fidelity decoys:　-20%
　　Short-range SAM defense:　　-20%

- If SOF attacks a SAM battery with high-fidelity decoys, the -20% modifier is no longer applicable.

- If the short-range SAM is suppressed, it cannot provide support to a long or medium-range SAM battery or an infrastructure target.

- Because each vehicle has its own illuminating radar, the Tor-M1 [SA-15] and the Pantsyr-S1E [SA-22] short-range SAMs can be broken up into half-batteries to protect two different collocated facilities. A short-range SAM half-battery assigned to protecting another SAM battery cannot protect an infrastructure target during the same Map Turn, and vice versa. The Iranian player must declare at the beginning of the Map Turn which facilities are being protected.

- The Buk-M1 [SA-11] medium-range SAM can also be split into half-batteries, they can defend one or two facilities that are collocated (such as the Arak heavy water production plant and reactor). Each half-battery must be suppressed or attacked by SOF individually.

Example: The Iranian player purchased an S-300PMU-1 [SA-20a] battery and high-fidelity decoys to be deployed at the Natanz facility. A half-battery of Tor-M1 [SA-15] was positioned to defend the S-300PMU-1 [SA-20a] battery, while

the other half-battery is assigned to defend the Natanz facility Primary Target set.

The Israeli player is sending in the entire F-15I Ra'am squadron as strikers, with six F-16I Sufa in support as dedicated escorts. Twelve F-16Is are conducting fighter suppression in sector II, while an entire squadron (24 aircraft) are assigned to SAM suppression. The strike is using the northern approach, which precludes the S-200VE [SA-5b] batteries at Isfahan and Tehran Central from engaging.

Twelve of the F-16Is are assigned to suppressing the six I-Hawk, HQ-2J, and Kub-M3 [SA-6] batteries (two aircraft per battery). Since these are not advanced SAMs, and do not have decoys or point defense, the probability of suppressing each battery is 70%.

The remaining twelve F-16Is are assigned to suppress the S-300PMU-1 [SA-20a] battery and the two Tor-M1 [SA-15] half-batteries (4 aircraft each). Both the S-300PMU-1 [SA-20a] and the Tor-M1 [SA-15] are advanced SAMs (section 3.4 in the Rules Booklet). The S-300PMU-1 [SA-20a] has high-fidelity decoys, as well as point defense from one of the Tor-M1 [SA-15] half-batteries. However, since the Tor-M1 [SA-15] half-batteries are also under attack, resolve their attacks first to see if they are suppressed.

    - Tor-M1 [SA-15] half-battery
        4 aircraft = 95%
        Advanced SAM = -25%
        Short-range SAM defense = -20%

    Final probability of suppression = 50%

The Israeli player rolls D100 twice and gets a 45 and a 77, which results in the Tor-M1 [SA-15] half-battery covering the S-300PMU-1 [SA-20a] being suppressed and incapable of defending the longer range SAM. The Tor-M1 [SA-15] half-battery covering the Natanz facility is not suppressed and can still provide point defense.

    - S-300PMU-1 [SA-20a] battery
        4 aircraft = 95%
        Advanced SAM = -25%
        High-fidelity decoys = -20%

    Final probability of suppression = 50%

The Israeli player rolls D100 and gets a 23, the S-300PMU-1 [SA-20a] battery is suppressed and cannot fire in either the incoming or outgoing medium-range SAM nodes. Even though the S-300PMU-1 [SA-20a] has the ability to engage in both the long and medium-range SAM nodes, the long-range SAM node is blocked since the Israelis used the northern route to the target. Note: this example did not include the results from a SUTER attack, the rules for which remain unchanged.

Changes to Air-to-Air and SAM Combat

Air-to-air and SAM engagements have been blended together so that they use the same combat resolution tables - one that gives an expected number of hits, and another that uses a die roll to provide the final outcome. The number of shots and their probability of hit are listed in the Fighter

Capability Table and the SAM Capability Table (page 5) for each weapon system. Again, players do not need to use the Air Data Cards if they so desire. The Fighter Capability Table contains all the necessary information to resolve air-to-air engagements.

SAM Engagements. If a SAM system is not destroyed (SOF attack) or suppressed, it can fire at Israeli aircraft in the appropriate node. For each SAM system, go to the SAM Capability Table and find the number of attacks per battery, along with the probability of hit.

Cross reference these two values on the Air Combat Engagement Table (page 6) to find the expected number of hits. Take this value to the appropriate row on Air Combat Results Table (page 6) and roll 2D6 to determine the number of aircraft damaged or shot down.

Example: The Israeli player successfully suppressed the S-300PMU-1 [SA-20a], two I-Hawk, and the two Kub-M3 [SA-6] SAM batteries. This leaves one I-Hawk and the HQ-2J medium-range SAM batteries able to engage the incoming raid.

    I-Hawk Battery:
        Attacks per Battery: 1
        Probability of Hit: 0.15

    HQ-2J
        Attacks per Battery: 1
        Probability of Hit: 0.05

Both SAM systems have "0" expected number of hits on the Air Combat Engagement Table. The Iranian rolls 2D6 twice, using the "0" Expected Hits row on the Air Combat Results Table. A die roll of 10 or better indicates one aircraft was hit. SAM hits in the inbound nodes prevent the affected aircraft from participating in the attack.

Most long and medium-range SAMs will be able to engage in both the incoming and outbound nodes. However, due to the limited number of launchers, S-200VE [SA-5b] batteries get only one engagement per Map Turn.

The HQ-9 and S-300PMU-1 [SA-20a] can only make two attacks per Map Turn. They have such high engagement rates that they can actually expend all available missiles in two attacks. These attacks can be made in the incoming or outbound, long or medium-range SAM nodes. But frankly, these attacks will most likely occur during the incoming long and medium-range SAM nodes if possible.

The Buk-M1 [SA-11] system is the only medium-range SAM that can be split into half-batteries to cover two collocated infrastructure targets (example: Arak, Isfahan, Abadan).

American F-22 and B-2 aircraft are, for all intents and purposes, immune from SAM attacks, including the S-300PMU-1 [SA-20a]. Even though the early warning radar may have a chance to detect these stealth aircraft before they dropped their ordnance, the missile guidance radar would not have time to lock on before the aircraft had released their bombs and turned away.

Air-to-Air Engagements. The number of Iranian fighters that can attempt to intercept the raid, and their order of arrival, follows the existing *Persian Incursion* rules, with the GCI Fighter Table (page 27 in the Rules Booklet or the Iranian Player Card) die roll remaining unchanged. However, instead

SAM Capability Table

System Name	Advanced SAM	SAM Range	Aircraft Chance of Hit	PGM Chance of Hit	Attacks per Battery	Remarks
Buk-M1 [SA-11]	Yes	Med	0.35	NA	4	4 vehicles with 1 attack each
HQ-2J/Sayyad	No	Med	0.05	NA	1	
HQ-9	Yes	Long	0.45	NA	6	
I-Hawk/Shahin	No	Med	0.15	NA	1	
Kub-M3 [SA-6]	No	Med	0.10	NA	1	
Pantsyr-S1E [SA-22]	Yes	Short	NA	0.75	12	6 vehicles with 2 attacks each
S-200VE [SA-5b]	No	Long	0.05	NA	1	
S-300PMU-1 [SA-20a]	Yes	Long	0.50	NA	6	
Tor-M1 [SA-15]	Yes	Short	NA	0.65	8	4 vehicles with 2 attacks each

Notes:

1) For every three PGM hits by advanced short-range SAMs (SA-22 and SA-15) shift one column to the left on the Air Strike Attack Table.

2) Distributed SAM systems, SA-11, SA-15, and SA-22, only have half of the battery suppressed or destroyed by a single aircraft SAM suppression mission or SOF attack.

Fighter Capability Table

Country	Aircraft	Mission	BVR Shots	Prob of Hit	Dogfight Shots	Prob of Hit	Remarks
Israel	F-16I Sufa	Strike	2	0.85	NA	NA	Note 2
Israel	F-16I Sufa	Escort	4	0.85	2	0.85	Note 2
Israel	F-15I Ra'am	Strike	2	0.85	2	0.85	Note 2
Iran	F-5E/F Tiger II	Intercept	NA	NA	2	0.05	Note 3
Iran	F-7M/N Fishbed C	Intercept	NA	NA	1	0.05	Note 3
Iran	F-4D/E Phantom II	Intercept	2	0.10	2	0.05	Note 3
Iran	F-14A Tomcat	Intercept	2	0.10	1	0.05	Note 3
Iran	MiG-29A Fulcrum	Intercept	1	0.35	2	0.30	
PRC	J-10A	Intercept	2	0.60	1	0.15	
PRC	J-11A	Intercept	3	0.35	1	0.30	
			1	0.65			
Russia	Su-27 Flanker	Intercept	3	0.35	2	0.30	
Russia	MiG-29SMT Fulcrum	Intercept	2	0.65	1	0.30	
Russia	MiG-31 Foxhound	Intercept	2	0.30	2	0.10	
USA	F/A-18E/F Super Hornet	Strike	2	0.85	2	0.80	Note 2
USA	F/A-18E/F Super Hornet	Escort	6	0.85	2	0.80	Note 2
USA	F-22 Raptor	Strike	2	0.85	2	0.70	Note 2, 4
USA	F-22 Raptor	Escort	6	0.85	2	0.70	Note 2, 4

Notes:

1) If a B-2 is successfully intercepted per the GCI Fighter Table (page 27, Rules Booklet) use missile probability of hit as listed above.

2) Against MiG-29, Su-27, J-10, and J-11, reduce probability of hit by 0.25.

3) Dogfight AAM upgrade increases probability of hit to 0.10.

4) If a F-22 is successfully intercepted per the GCI Fighter Table (page 27, Rules Booklet), Iranian aircraft BVR and Dogfight missiles have a 0.05 probability of hit. Russian and Chinese aircraft BVR missiles have a 0.15 probability of hit, and Dogfight missiles have a 0.05 probability of hit.

Air Combat Engagement Table

	SAM or AA Missile Probability of Hit																
# of Shots	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85
1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
2	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2
3	0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	2	3
4	0	0	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3
5	0	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4
6	0	1	1	1	2	2	2	2	3	3	3	4	4	4	5	5	5
7	0	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6
8	0	1	1	2	2	3	3	3	4	4	4	5	5	6	6	6	7
9	0	1	1	2	2	3	3	4	4	5	5	5	6	6	7	7	8
10	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
11	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9
12	1	1	2	2	3	4	4	5	5	6	7	7	8	8	9	10	10

Air Combat Results Table

	2D6 Die Roll										
Expected Hits	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	1	1	1
1	0	0	0	0	1	1	1	1	1	2	2
2	0	0	1	1	1	2	2	2	2	3	3
3	0	1	1	2	2	3	3	3	3	4	4
4	1	2	2	3	3	4	4	4	4	5	5
5	2	3	3	4	4	5	5	5	5	6	6
6	3	4	4	5	5	6	6	6	6	7	7
7	4	5	5	6	6	7	7	7	7	8	8
8	5	6	6	7	7	8	8	8	8	9	9
9	6	7	7	8	8	9	9	9	9	10	10
10	7	8	8	9	9	10	10	10	10	11	11

of using the Air Combat Diagram with the BVR and Dogfight zones, the Israeli player rolls a D10 for initiative. If the results of the die roll is a 1 - 8, the Israeli player has the initiative and gets the first shots off. Afterwards, any surviving Iranian aircraft can fire their BVR missiles. On a die roll of 9 or 0, both sides fire their BVR missiles simultaneously, applying the results immediately.

If allied aircraft become involved in air-to-air combat, their forces roll separately. Should Russian or Chinese fighters attempt to intercept a raid, the Israeli player's initiative die roll becomes more challenging. On a roll of 1 - 6, the Israeli player still has the initiative and can attack with his BVR missiles. On a roll of 7 - 0, both sides attack simultaneously. US aircraft have the same initiative die roll as the Israelis.

Once it is determined which side has the initiative, both players consult the Fighter Capability Table, or the Air Data Cards as desired, and declare how many BVR shots their fighters will be taking *before* any dice is rolled. The Israeli player then cross references the number of BVR shots with the missile's probability of hit value (listed in the Fighter Capability Table or the Air Data Cards) on the Air Combat Engagement Table to find the expected number of hits. Take this value to the appropriate row on the Air Combat Results Table and roll 2D6 to determine the number of aircraft damaged or shot down. The Iranian player follows the same procedure to execute his attacks.

Surviving aircraft can then merge into a dogfight. Unlike the BVR missile attacks, there is no initiative die roll and both sides execute their attacks simultaneously. The procedure for resolving dogfight missile attacks is exactly the same as BVR missiles.

Note: If the Israeli raid has a dedicated escort, the Iranian player must fight his way through these fighters first before he can attempt to engage the striking aircraft. Essentially, the Iranian player has to face two separate engagements, with the second engagement having its own initiative die roll. *Example:* The Iranian player has two F-14A Tomcat and two F-7M Fishbed C fighters on patrol in sector II, along with a two squadrons of F-5E Tiger IIs and F-7M Fishbed Cs on alert. The Israeli player has allocated twelve F-16I Sufa towards fighter suppression.

Rolling on the Fighter Suppression Table, with no modifiers, the Israeli player gets a "-3" result. This value is carried over and applied to the GCI Fighter Table.

The Iranian player then rolls on the GCI Fighter Table with the following modifiers:

F-14 squadron on patrol: +1
Two squadrons on patrol: +4 (F-14A and F-7M)
Two squadrons on alert: +2 (F-5E and F-7M)

Israelis using the northern route: -3
Fighter Suppression Table results: -3

Neither side applied extra Military Points (MP) towards this attack, and this example doesn't include the effect of a SUTER attack as before.

Final GCI Fighter Table modifier is +1.

Rolling a "4" on 2D6, and adding the +1 final modifier, the Iranian can have four aircraft arriving together in the same flight. He chooses not to have the F-7M Fishbed C fighters

engage, as all they would be good for is sucking up Israeli AMRAAMs, and the two F-14A Tomcats valiantly close on the incoming raid.

The Israeli player has six F-16Is as dedicated escort, and he decides to vector four of them to engage the Iranian interceptors. Rolling the D10 for initiative, he has the misfortune of getting a "9" - simultaneous BVR shots.

The Israeli player sees that each F-16I escort has four BVR shots with a probability of hit of 0.85. He declares each F-16I will take one shot at the F-14As. Cross referencing the four shots with a 0.85 probability of hit on the Air Combat Engagement Table gives three expected hits.

Finding the "3" row on the Air Combat Results Table, the Israeli player rolls an "8" on 2D6 and gets three hits. This takes care of both Iranian fighters.

The Iranian player has two BVR shots for each F-14A with a probability of hit of 0.10. He quickly announces that the two fighters will shoot everything they have. Cross referencing the four shots with a 0.10 probability of hit gives zero expected hits.

Finding the "0" row on the Air Combat Results Table, the Iranian player rolls a "10" on 2D6 and gets one hit.

Air Strike Resolution. Once the Israelis get through the Iranian air defenses, they can attack the targeted facility. As mentioned earlier, attacks by short-range SAMs and AAA against the striking aircraft is a non-issue. The Israelis can lob GPS and laser guided munitions from well outside the short-range defenses maximum engagement range.

The Israeli strike is separated into two distinct attacks; one against the Primary Target set, and the other against the Secondary Target set. The two groupings within each target set, damaged and destroyed, are directly tied to the strike's victory conditions. All the hit boxes in each group have to be checked off to attain the listed victory level. Aircraft assigned to attacking a particular target set can only damage that set. Any extra damage has no effect on the other target set - they're just bouncing the rubble.

First, resolve any attacks by Tor-M1 [SA-15] or Pantsyr-S1E [SA-22] SAMs defending the target set. Each half-battery must be assigned to defend either a long-range SAM system, or a primary or secondary infrastructure target set, and cannot defend another target. For every three PGMs that a half-battery succeeds in shooting down, the Iranian player gets an advantageous column shift on the Air Strike Attack Table. The results from each half-battery must be resolved separately and applied independently, regardless of how they are deployed or what targets they are defending. In the case of the Pantsyr-S1E [SA-22], it is possible that a half-battery could shoot down six PGMs. Should this occur, then the Iranian player gets a two-column left shift on the Air Strike Attack Table.

Example: The Iranian player has allocated a half-battery of Tor-M1 [SA-15] to defend the Natanz facility Primary Target set. Going to the SAM Capability Table, he sees that a half-battery has four shots with a probability of hit against a PGM of 0.65.

Cross referencing the number of shots and the probability of hit on the Air Combat Engagement Table gives three expect hits. Finding the "3" row on the Air Combat Results Table, the Iranian player rolls an "7" on 2D6 and gets three hits. A sufficient number of hits to get the one column shift to the left when the Israelis resolve their attack.

The second step is to find out how many hit boxes the Israelis check off from each of the target set groupings. The Israeli player takes the number of aircraft making the attack, less any aircraft lost in the previous air defense nodes, and shifts the column left or right depending on the applicable modifiers. Cross-reference the final column with the aircraft type. This gives the number of expected number hits. The Israeli player then rolls 2D6 per squadron on the Air Strike Combat Results Table to obtain the actual number of hits from the strike.

Example: The Israeli player has assigned the entire F-15I Ra'am squadron to attack the Natanz facility. Sixteen of the F-15I's are attacking the Primary Target set, and are using the EGBU-28C Upgrade (Aircraft Type = F-15I Hvy Strike*). Note: Only heavy strikes by F-15I or B-2s can cause damage (check off hit boxes) to the Natanz facility's Primary Target set.

The remaining eight F-15I are attacking the Secondary Target set with more traditional ordnance (Aircraft Type = F-15I Lt Strike).

Since the Israeli player suffered no losses to the strikers, he starts out with the Primary Target set and finds the "16" aircraft column on the Air Strike Attack Table. He also had a SOF mission planned to provide improved targeting, or a "spot," which is successful (see section 3.5.2 on pages 17 and 18 in the Rules Booklet). The Israeli player now applies all applicable modifiers:

GPS Jamming vs 2nd Gen Guidance: 1 Left
Air Defense by short-range SAMs: 1 Left
SOF Spot: 1 Right

The net result is a shift of one column to the left, which reduces the number of aircraft attacks to fifteen. No aircraft have been shot down, but one aircraft's worth of PGMs have been removed from the attack. Cross referencing with the aircraft type gives 58 expected hits. The Israeli player rolls 2D6 on the Air Strike Combat Results Table, gets a 3, and groans. The die roll indicates that he only inflicted 55 hits (58-3) on the Primary Target set.

Going to the Natanz target summary shows that the 35 boxes in the Primary Target set damaged grouping are all checked off, but only 20 of the destroyed grouping are marked off - there are three hit boxes remaining. Regardless of the result of the attack on the Secondary Target set, the best the Israeli player can get from the attack is a Tactical Victory.

Moving on to the eight F-15I's attacking the Secondary Target set, he finds the "8" column and applies the same GPS jammer (an upgrade chosen by the Israeli player) and SOF modifiers. As the two modifiers cancel each other out, the result is no shift in columns. Note: The Tor-M1 [SA-15] defense is applicable to only one target set. Since the Iranian player assigned the Tor-M1 [SA-15] half-battery to the Primary Target set, the secondary groups do not have SAM protection.

Cross referencing the "8" aircraft column with the F-15I Lt Strike aircraft type gives 41 expected hits. The Israeli player rolls 2D6 on the Air Strike Combat Results Table and gets a 9, signifying that 42 hits (41+1) were inflicted on the Secondary Target set. Since the Secondary Target set groupings only have 39 hit boxes, it is totally destroyed and the three extra hits are wasted - they cannot be transferred to the Primary Target set.

Even though the Primary Target damaged group and the Secondary Target damaged group have all had their hit boxes checked off, there are still three hit boxes left in the Primary Target destroyed group. Thus, the Israelis have achieved a Tactical Victory from this attack. To achieve a Decisive Victory, the Israelis will have to make another strike on Natanz.

Air Strike Attack Table

Aircraft Type											Number of Aircraft															Max
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
F-15I Hvy Strike	3	6	8	11	14	17	20	23	25	28	31	34	37	40	42	45	48	51	54	57	59	62	65	68	71
F-15I Hvy Strike*	4	8	12	15	19	23	27	31	35	38	42	46	50	54	58	61	65	69	73	77	81	84	88	92	96
F-15I Lt Strike	5	10	15	20	26	31	36	41	46	51	57	62	67	72	77	82	88	93	98	103	108	113	119	124	129
F-16I Strike	3	5	8	10	13	15	18	20	23	25	28	30	33	35	38	40	43	45	48	50	53	55	58	60	63
F/A-18E/F Strike	5	10	15	20	26	31	36	41	46	51	57	62	--	--	--	--	--	--	--	--	--	--	--	--	--
F-22 Strike	5	10	15	20	26	31	36	41	46	51	57	62	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2 Lt Strike	23	46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2 Hvy Strike	12	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

* = EGBU-28C Upgrade that automatically has the GPS Upgrade.

Modifiers:
GPS Jamming vs First Gen: Shift two columns to the left.
GPS Jamming vs Second Gen: Shift one column to the left.
Laser Decoys: Shift three column to the left.
Note: For PGM guidance type, see page 33 in the Rules Booklet.

SOF Spot: Shift one column to the right.
Air Defense: For every three PGMs hit by advanced short-range SAMs (SA-22 and SA-15) shift one column to the left.
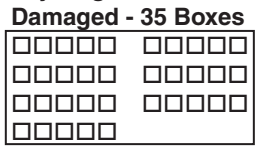
Air Strike Combat Results Table

2D6 Die Roll

2	3	4	5	6	7	8	9	10	11	12
-4	-3	-2	-1	0	0	0	+1	+2	+3	+4

Nuclear Infrastructure Target Summary

Natanz Uranium Enrichment Facility
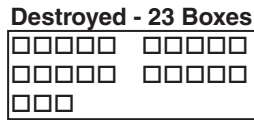
Primary Targets

Damaged - 35 Boxes

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☐☐☐☐☐

Tactical Victory

Destroyed - 23 Boxes

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☐☐☐☐☐ ☐☐☐☐☐
☐☐☐

Decisive Victory

Secondary Targets

Damaged - 25 Boxes

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☐☐☐☐☐ ☐☐☐☐☐
☐☐☐☐☐

Decisive Victory

Destroyed - 14 Boxes

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☐☐☐☐
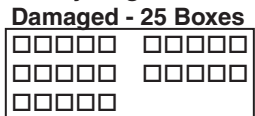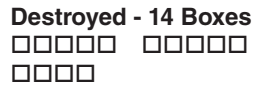
Note: Primary Target set must be attacked by F-15I Ra'am or B-2 Heavy Strike.

Arak Heavy Water Plant

Primary Targets

Damaged - 16 Boxes

☐☐☐☐☐ ☐☐☐☐☐
☐☐☐☐☐ ☐

Tactical Victory

Destroyed - 16 Boxes

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☐☐☐☐☐ ☐

Decisive Victory

Secondary Targets

Damaged - 15 Boxes

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☐☐☐☐☐

Decisive Victory

Destroyed - 13 Boxes

☐☐☐☐☐ ☐☐☐☐☐
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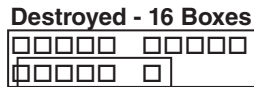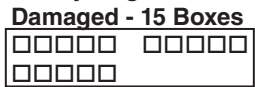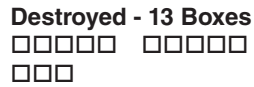
Arak Reactor Facility

Primary Targets
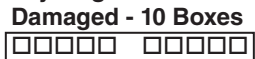
Damaged - 10 Boxes

☐☐☐☐☐ ☐☐☐☐☐

Tactical Victory

Destroyed - 7 Boxes

☐☐☐☐☐ ☐☐

Decisive Victory

Secondary Targets

Damaged - 27 Boxes

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☐☐☐☐☐ ☐☐☐☐☐
☐☐☐☐☐ ☐☐

Decisive Victory

Destroyed - 18 Boxes

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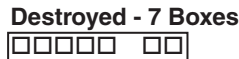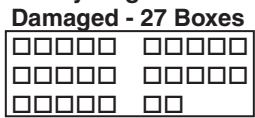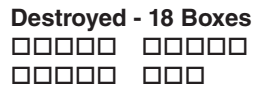
Qom Uranium Enrichment Facility

Primary Targets
Damaged - 2 Boxes   **Destroyed - 2 Boxes**
☐☐   ☐☐
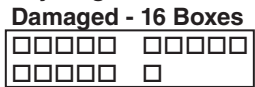Tactical Victory Decisive Victory

Secondary Targets - None

Note: Primary Target set must be attacked by F-15I Ra'am or B-2 Heavy Strike.

Isfahan Uranium Conversion Facility

Primary Targets
Damaged - 8 Boxes   **Destroyed - 4 Boxes**
☐☐☐☐☐ ☐☐☐   ☐☐☐☐
Tactical Victory Decisive Victory

Secondary Targets
Damaged - 26 Boxes   **Destroyed - 13 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐☐☐☐
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐
☐☐☐☐☐ ☐
Decisive Victory
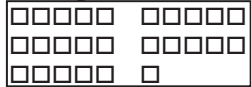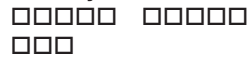
Isfahan Fuel Manufacturing Plant

Primary Targets
Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Tactical Victory Decisive Victory

Secondary Targets
Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Decisive Victory

Isfahan Zirconium Production Plant

Primary Targets
Damaged - 18 Boxes   **Destroyed - 15 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐☐☐☐
☐☐☐☐☐ ☐☐☐   ☐☐☐☐☐
Tactical Victory Decisive Victory

Secondary Targets
Damaged - 10 Boxes   **Destroyed - 7 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐
Decisive Victory

Oil Infrastructure Target Summary

Abadan Oil Refinery and Terminal

Refinery Primary Targets

Damaged - 12 Boxes   **Destroyed - 11 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐☐☐☐
☐☐   ☐
Tactical Victory Decisive Victory
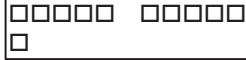
Refinery Secondary Targets

Damaged - 11 Boxes   **Destroyed - 5 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐
☐
Decisive Victory
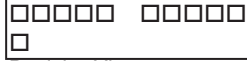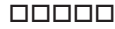
Terminal Primary Targets

Damaged - 4 Boxes   **Destroyed - 2 Boxes**
☐☐☐☐   ☐☐
Tactical Victory Decisive Victory

Terminal Secondary Targets

Damaged - 18 Boxes   **Destroyed - 9 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐☐☐
☐☐☐☐☐ ☐☐☐
Decisive Victory

Note: The terminal is used for transporting refined petroleum products internally and is not used for exports.

Arak Oil Refinery

Primary Targets

Damaged - 3 Boxes   **Destroyed - 3 Boxes**
☐☐☐   ☐☐☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 8 Boxes   **Destroyed - 4 Boxes**
☐☐☐☐☐ ☐☐☐   ☐☐☐☐
Decisive Victory

Bandar Abbas Oil Refinery

Primary Targets

Damaged - 3 Boxes   **Destroyed - 3 Boxes**
☐☐☐   ☐☐☐
Tactical Victory Decisive Victory

Secondary Targets
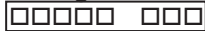
Damaged - 8 Boxes   **Destroyed - 4 Boxes**
☐☐☐☐☐ ☐☐☐   ☐☐☐☐
Decisive Victory

Isfahan Oil Refinery

Primary Targets

Damaged - 7 Boxes   **Destroyed - 7 Boxes**

☐☐☐☐☐ ☐☐   ☐☐☐☐☐ ☐☐

Tactical Victory Decisive Victory

Secondary Targets

Damaged - 9 Boxes   **Destroyed - 5 Boxes**

☐☐☐☐☐ ☐☐☐☐   ☐☐☐☐☐

Decisive Victory

Kermanshah Oil Refinery

Primary Targets

Damaged - 3 Boxes   **Destroyed - 3 Boxes**

☐☐☐   ☐☐☐

Tactical Victory Decisive Victory

Secondary Targets

Damaged - 8 Boxes   **Destroyed - 4 Boxes**

☐☐☐☐☐ ☐☐☐   ☐☐☐☐

Decisive Victory

Lavan Island Oil Refinery

Primary Targets

Damaged - 3 Boxes   **Destroyed - 3 Boxes**

☐☐☐   ☐☐☐

Tactical Victory Decisive Victory

Secondary Targets

Damaged - 8 Boxes   **Destroyed - 4 Boxes**

☐☐☐☐☐ ☐☐☐   ☐☐☐☐

Decisive Victory

Shiraz Oil Refinery

Primary Targets

Damaged - 4 Boxes   **Destroyed - 4 Boxes**

☐☐☐☐   ☐☐☐☐

Tactical Victory Decisive Victory

Secondary Targets

Damaged - 8 Boxes   **Destroyed - 4 Boxes**

☐☐☐☐☐ ☐☐☐   ☐☐☐☐

Decisive Victory

Tabriz Oil Refinery

Primary Targets

Damaged - 4 Boxes   **Destroyed - 4 Boxes**

☐☐☐☐   ☐☐☐☐

Tactical Victory Decisive Victory

Secondary Targets

Damaged - 6 Boxes   **Destroyed - 3 Boxes**

☐☐☐☐☐ ☐   ☐☐☐

Decisive Victory

Tehran Oil Refinery
Primary Targets

Damaged - 8 Boxes   **Destroyed - 8 Boxes**
☐☐☐☐☐ ☐☐☐   ☐☐☐☐☐ ☐☐☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 13 Boxes   **Destroyed - 7 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐
☐☐☐
Decisive Victory

Refinery	Production (Thousands bbls/day)	% of National Total
Arak	170	12%
Kermanshah	30	2%
Tabriz	100	7%
Tehran	220	15%
Shiraz	40	3%
Bandar Abbas	230	16%
Isfahan	250	18%
Abadan	350	25%
Lavan Island	30	2%
Total	**1,420**	**100%**

Kharg Island Oil Terminal
Primary Targets

Damaged - 16 Boxes   **Destroyed - 8 Boxes**
☐☐☐☐☐ ☐☐☐☐☐   ☐☐☐☐☐ ☐☐☐
☐☐☐☐☐ ☐   Decisive Victory
Tactical Victory

Secondary Targets

Damaged - 9 Boxes   **Destroyed - 8 Boxes**
☐☐☐☐☐ ☐☐☐☐   ☐☐☐☐☐ ☐☐☐
Decisive Victory

Sirri Island Oil Terminal
Primary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Decisive Victory

Lavan Island Oil Terminal
Primary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 4 Boxes   **Destroyed - 2 Box**
☐☐☐☐   ☐☐
Decisive Victory

Ras Bahregan (formerly Cyrus) Oil Terminal
Primary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Decisive Victory

Neka Oil Terminal
Primary Targets

Damaged - 2 Boxes   **Destroyed - 1 Box**
☐☐   ☐
Tactical Victory Decisive Victory

Secondary Targets

Damaged - 6 Boxes   **Destroyed - 3 Box**
☐☐☐☐☐ ☐   ☐☐☐
Decisive Victory
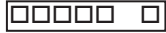
Oil Terminal	Capacity (Thousands bbls/day)	% of National Total
Kharg Island		
T-Jetty	1,664	18%
Sea Island Terminal	2,453	27%
Doroush Terminal	876	10%
Sirri Island Terminal	1,454	16%
Lavan Terminal	1086	12%
Ras Bahregan	1,051	11%
Soroush	280	3%
Neka	298	3%
Total	**9,162**	**100%**