

BMU's Pinball "EM-cyclopedia"

A Player's Guide to Electro-Mechanical Pinball Machines

Author's note: I started playing pinball in the early 1970's. It was 10 cents a game, all EMs, and add-a-ball only - - replays were illegal in New York state. To make my dimes go the furthest, I had to strive for long games. This is some of my accumulated knowledge from the past 45 years. My ideas aren't always perfect [nor my execution of them!], but they've worked pretty well for me. In some cases, expert players may have different opinions on choices of shots or flipper techniques to use than what I describe here. That's fine; if you find or hear of something better that works for you, use it! If you find the tips here help you, you're welcome, and spread the word. And if you want to pass this along to someone or somewhere else, go ahead as long as it's attributed to me.

Since Pinburgh 2017 is coming up soon, I'd be interested in how well this guide works for people who participate. If you find something you'd care to add or correct, pass it along to me. I've omitted some details when I couldn't remember them precisely, e.g. bonuses that max out at 19000 vs. 15000 in a case or two, so I know there are some gaps to be filled in yet. Thanks. [Bob Matthews]

Overview

Electro-mechanical pinball machines, commonly called "EM"s for short, are the older games which were made up until the mid 1970's. Most of the ones you'll see in tournaments were made by either Gottlieb, Williams or Bally. Most of those which are "tournament grade" in terms of design, maintainability and "skill" date from about 1965 to 1977, skewing towards the latter years. All have mechanical scoring reels which rotate vertically to advance in value. Some have an indicator light to show when a player has "rolled over" the score, typically at a value of 100,000, but no indication when a player rolls the game a second time. The games have manual coil plungers, but the older ones also may have a push-up trough where the player must first push a lever to raise a ball into the plunger lane prior to pulling the plunger to serve the ball. These machines will show the balls yet to be

plunged through a glass window in the lower right front of the top of the game surface.

Preview & Quick Principles

1. When in doubt, UTAD - - Up Top All Day. Through a lit spinner, if possible.
2. Nudging: there are usually NO tilt warnings. Nudge, don't shake or slide. One-time bumps on the side or front of the game should suffice.
3. If there's a "collect bonus" shot and your bonus is close to maximum, shoot it.
4. If there's a "light double bonus" shot lit, shoot it.
5. Complete sets of things [targets of a given color or suit, lanes, saucers, etc.] are better than some of each.
6. If there's a "close flippers" shot [older EMs from the 1960's], shoot it.
7. If there's a shot or a nudge that gets the ball back to the plunger lane, do so.
8. When shooting for bumpers, whether normal or "mushroom," try to make the hits grazing ones where the ball will continue upwards after hitting the bumper. [See El Toro, Fireball, Cosmos, etc.]
9. Use dead bounces to pass the ball across to the other flipper and get to a cradle. Most older games have relatively "dead" flippers so that such bounces are unlikely to go up into the slingshots and out of control.

List of Machines Covered in Detail Here

1. 300
2. 2001 / Dimension
3. Aces & Kings
4. Aerobatics
5. Amigo
6. Aquarius
7. Argosy
8. Atlantis
9. Aztec

10. Bank Shot / Sure Shot / Spot Pool
11. Big Indian / Big Brave
12. Blue Chip
13. Bow & Arrow
14. Captain Fantastic
15. Card Whiz / Royal Flush
16. Centigrade 37
17. Cosmos
18. Doozie
19. Dragon
20. Drop-A-Card / Pop-A-Card
21. El Dorado / Gold Strike / Target Alpha / etc.
22. El Toro
23. Fast Draw
24. Fireball
25. Flicker
26. Flip-A-Card
27. Freedom
28. Fun Land
29. Grand Prix
30. Hang Glider
31. Hi Lo Ace
32. High Hand / Captain Card
33. Hokus Pokus
34. Hot Line
35. Hot Tip
36. Jack In The Box
37. Jacks Open / Jumping Jack
38. Jet Spin
39. Jungle Queen / Jungle Princess
40. King Kool
41. King of Diamonds
42. Knockout
43. Liberty Bell
44. Little Chief
45. Little Joe
46. Melody

47. Miss-O
48. Monaco
49. Night Rider
50. Old Chicago
51. Pat Hand / Satin Doll
52. Poker Plus
53. Prospector
54. Safari
55. Scuba
56. Sinbad
57. Sky Kings
58. Skylab / Spacelab
59. Snow Derby / Snow Queen
60. Soccer
61. Space Race
62. Strato-Flite
63. Super Straight
64. Surfer / Surf Champ
65. Target Pool
66. Time Zone
67. Triple Action / Star Action
68. Volley
69. Wizard
70. Zig Zag

Ball Control

When you have the ball cradled on a flipper, you usually can't transfer it to the other flipper using a post pass as you would on most recent machines. There may be no posts, or they may be too high up, or too close, or the flippers unsuited for making that move. Your two basic alternatives are tap passing [soft late flip] and alley passing aka Shatzing [end-of-the-flipper shot into the opposite flipper lane]. Bally games are more likely to accommodate tap passes due to the flipper construction. Williams games more often can apply shatzing. Gottlieb games often can't reliably handle either one safely.

Drop catching, live catching and *especially dead bounces* will be very useful, but beware the "dead catch" or "death bounce." Sometimes the flipper response will be so slow after a catch that the ball will roll off the end of it before you can flip.

Or the flipper rubber will be so dead that the bounce off of it won't make it across to the opposite flipper, just die down the center. Watch and learn from the player ahead of you if you can.

Micro-flipping. On several games, the ball can come to rest between either the tips of the two flippers, when in a "closed flippers" position, or between a flipper and a center post. When you have a chance to let the ball do this, take it unless it's easier to get the ball directly to a flipper cradle. Once the ball is there, use tiny flips to nudge it to a spot where you can either cradle it on the opposite flipper [Time Zone], or take a shot as it rolls up the other flipper if that's more advantageous [Fireball].

Nudging and "Key Feeds"

Few if any shots will return to a flipper, unlike more recent games with ramps and orbits. Shots will bounce off of things or go through things. When they rebound or exit, it's important to learn where the ball goes and how much you can alter that. Some rebounds and exits are relatively consistent, some not. Rebounds will depend on speed and angle of hit and whether or not the thing hit hits back; exit paths may depend on how the ball entered the feature, how fast the ball comes through, and whether or not it hits any post, knob or other object at the exit.

A "key feed" is where the ball goes after you make an important shot that you'll be repeating often. [See El Dorado, Wizard, Card Whiz.] It's important to learn "feed nudging," particularly for key feeds. When the ball goes through a feed, you want it to come to where you can control it if possible, at a minimum prevent it from draining, and usually avoiding it heading into and triggering a slingshot or other playfield feature where it may bounce away randomly. The nudge-or-not decision may depend on how the ball entered the feature or its speed: On El Dorado, if the ball goes down the right side through the outer [right] lane, it will be moving faster and cleaner than if it goes through the left of the two right-side lanes. The faster feed may come out clean and travel to a flipper, while the slower feed may dribble out and hang up on top of the slingshot, where it can rattle off and drain out to the right. Also, timing may be critical, e.g. you may want to nudge just as the ball hits a post, the top of a slingshot, etc.

Common EM Playfield Features

EMs have fewer types of playfield features than later games; technology takes time. Here are the features you'll find most often:

1. Lane Sets

Often used to advance Bonus Multiplier [or light a lane to do so] or to increase the value of Drop Targets or other playfield features.

2. Drop Target Sets

On most EMs, there's no scoring advantage to hitting targets in any particular order. [Sample exception: Sinbad] That doesn't mean there's not a best order to hit them in, however! Some targets are more dangerous than others due to where the rebounds tend to go. We'll deal with that by machine if needed. Otherwise, watch your rebounds and learn what's riskiest on your particular game. Avoid those targets if feasible, otherwise get them last.

Drop Target values may vary depending on what you've done before you hit them. Games where this is critical include:

Volley – targets are worth 1000 plus 1000 per completed lane up to 3; 4th lane resets lanes

Card Whiz -- targets are worth 1000 plus 1000 per completed lane up to 3

Jumping Jack - targets are worth 100 in bonus, 1000 if lit saucer collected

Several games have drop target-based end-of-ball bonuses. In some cases, complete sets matter [High Hand – 10 times the value for complete suits]. In other cases, they don't [El Dorado].

3. Spinners

Flaps that spin when the ball travels through them. When spinners are single-valued, they are usually not worth shooting. Most spinners, though, are dual-valued, e.g. 100 per spin unlit, 1000 when lit or 1K unlit and 10K lit. A few machines even have 3 or 4 spinner value levels. Somewhere on the game surface or instruction card will be text telling you how to light the spinners to their higher value. On some games, the spinners when lit are highly valuable compared to other features and are "safe" shots in that the ball goes up to the top of the game through them vs. a shot at a drop target where the rebound can drain. On these games, the optimal strategy often becomes "light spinner(s), then shoot spinners all day." Grand Prix is one of the best-known examples of this.

4. Rollover Buttons

Less common, these can be asterisk-shaped disks with slightly raised centers [Jungle King], lozenge-shaped disks about ½ inch wide [Satin Doll], or small tabs ¼" wide [Hang Glider]. They often advance your bonus or spot a number / card / letter.

5. Bumpers

Unlike most modern games, the scoring from bumpers can sometimes be a significant fraction of your game's total. Lighting bumpers to increase their value by a factor of 10 can be important. It's also not unusual to have some bumpers worth more than others in a game, e.g. some be 10 points when unlit and 100 lit, others 100 unlit and 1000 lit.

6. Waterfalls aka Plinko Lanes

Example games: 300, Atlantis, Centigrade 37, Sing-Along and ???s, these are a series of lanes, usually two parallel sets on the right hand side set one below the other, typically 3 or 4 sets. There may be a gate below the bottom right lane. The ball can drain out the [right] side if it comes down the outer lowermost lane and there is no open gate protecting it.

7. Saucers

These come in two basic physical types: sharp-edged ones just slightly larger than the pinball [Snow Derby], and shallow bowl-shaped ones [Little Chief]. Some just award points, although their value may change [Snow Derby again]. Others may cycle through different awards of either points, bonus advances, playfield features [open gate] or some combination thereof. Some may collect bonus. Note what it does when you see one; it may be the most important shot on the game. The bowl-shaped ones are more likely to have the ball rim out and not fall in; watch out for that.

8. Ball Return Gates

A wire gate, usually at the lower right, where the ball will return to either the plunger lane or the flipper if the gate is open vs. draining out the side if the gate is closed. If the game has such a gate, you usually want to open it a.s.a.p.

9. End of Ball Bonus

Many EMs are bonus-heavy, i.e. a large portion of your score will come from end-of-ball bonuses or from making a collect bonus shot. Always look to see what shots add bonus, what shots increase the bonus multiplier [if present], what shots light collect bonus [if present], and what shots collect bonus.

10. Slingshots

Many EM games have relatively weak slingshots, mostly due to age. In machines where there are no return lanes, e.g. the bottom configuration is outlane-left sling-left flipper-center gap-right flipper-right sling-right outlane, you'll often find the ball bouncing softly back and forth between the slingshots. Situations like this are where the "art of nudging" came to the forefront. Your goal in such situations is to nudge the machine (or not) when the ball hits the slings in order to get the ball to either settle gradually down to where it will be shootable with a flipper, or climb up and rise above the slings, but not go into either outlane. It's kind of like riding a swing as a child - - you "pump" the swing / sling to rise up (*or pull to drop down), but here, there's a "no fly zone" at the top of the sling where the ball must not go lest it drain. If you're in rising mode, once the last hit was just below the top of the sling, the next one needs to clear the outlane gap.

Examples: Drop-A-Card; Flip-A-Card; Fun Land

11. Random Value Features [Spinners / Targets / Saucers]

Do the math. If the values are 5, 50 or 500, treat it as worth 185, i.e. use the average value. Then prioritize your shots using that average value vs. the fixed-value shots.

Examples: Fun Land spinners; "300" and Soccer bonus-add saucers.

Specific Game Guides

300

Main features: two saucers upper left; the left one collects bonus + 1K; the right one randomly adds 1K, 2K or 3K bonus. Primary objectives!

Bonus lanes, right side. These are lit crosswise, i.e. either (top-left)+(second-right)+(third-left)+(bottom-right) or vice versa. If you shoot the ball into these, you'll want to keep it in the lit lanes to add bonus, so nudge accordingly. The bottom right lane drops to a gap between the return lane and a rubbered post and will drain if not nudged properly, unless the gate is open.

Open Gate lane, mid left side below saucers. Can't be reliably shot directly, but can be nudged in when bouncing off the left bumper. If the ball's in the vicinity, try to do so!

Skill shot: I like to go for the left of the two top lanes; the ball will fall onto the right pop bumper from there, and I try to nudge the bounce off the bumper into the upper [right] saucer.

This bowling-themed game has a rare “ball count” bonus feature, inside the backglass. Your bonus is one thousand per ball in the window. You want to get the bonus up close to its maximum of 10K, then collect it. The collect part is important since you can’t advance it beyond 10K, so bonus advance hits or lanes don’t add any bonus once you’re at 10K. At 10K, collecting bonus is your absolute priority.

Right flipper - - shoot for the saucers.

Left flipper - - shoot the spinner to advance bonus and get the ball rattling in the bumpers where it might bounce into a saucer.

Ball Control - - do NOT hold the right flipper up to roll the ball up to a cradle: it will often go up and out the gap at the right side of the wire form. Live catches and drop catches are fine, but use caution you don’t accidentally do the roll-out.

2001 / Dimension

Center saucer is always worth 300. This is your skill shot on ball one. Once other saucers are lit, you want to change your skill shot to a different saucer [see below].

The other 4 top saucers are worth 300 AFTER you’ve completed the 5 drops of the corresponding color, e.g. 5 greens down lights the green saucer. Worth 50 until then. This means that, given a choice of drop targets, finish a color. Completing a color also lights the lane of that color for 300 vs. 50 points. The upper colors, green and red, are better to get first since these each lights a return lane, while the lower banks each light an outlane.

The kickout from the center saucer goes onto the upper right sling, but usually not causing a hard enough kick to keep the ball up top. Unless the sling on your machine is snappy enough to keep the ball up top, prepare for nudging as it comes down. You want the ball to bounce off the red or yellow targets, or the rubber behind them, just enough to roll gently down the face of the lower slings to the flipper. Too hard a bounce will go down the middle.

The kickouts from the color saucers will hit a top bumper; depending on the exact alignment, you can sometimes nudge the rebound back into a saucer [may be a

different saucer]. If so, do as often as you can, and also change your skill shot to aim for that saucer.

Avoid the 4 standup targets facing you in the center. These are only useful on location when they award a replay or extra ball when lit [if turned on].

Ball control - - you usually can hold the flipper up and pass the ball across when it is rolling down the return lane. Choice of doing this or not goes with what targets you need to complete a color set first.

Aces & Kings

Kind of a misnomer given how to play it. Finishing either the Aces or the Kings lights the respective saucer on that side for extra ball, but assuming extra balls are off, they're pretty useless. So if EBs are out, don't bother to shoot aces or kings!

Your plunge will go through either the "light green joker" or "light yellow joker" lane. That makes the saucer value for whichever color you get 10 times its base value for the rest of that ball. Shooting the spinner increases the saucer value, but only for the color lit at the spinner at the time. The switches labelled "change" will flip which color the spinner advances. Ideally, you want to keep the spinner on the color you plunged and shoot it to advance it. Rebounds off of spinner shots, however, will often hit a change switch and flip it to the other color. If the spinner is on the wrong color, shoot the ball up the side of the machine to change it; it may take more than one try, depending on how many times you hit a change switch before you get the ball back under control on a flipper. Once your 10X side color bonus is at or near maximum value, shoot the saucer to collect. Rinse and repeat.

Aerobatics

Which item in the "loop the loop" feature is lit [that's the top left of the machine] is key here. If extra balls are on and "bonus ball" is the lit loop feature, any time you have the ball on the right flipper, shoot the left saucer right away. Similarly, if the loop is lit for 10X bonus, take that saucer shot.

Other than that, it's a mostly UTAD game. From the left flipper, shoot the right spinner, and try to get 10X bonus at the top saucer. From the right flipper, if the "loop the loop" feature is not currently on "10X Bonus," shoot loop the loop to try to light it. In general, shooting up top from the left flipper is better than shooting

the loop from the right, so if you have the option to transfer between flippers, get the ball on the left one unless it's time to shoot the left saucer.

Once your bonus is maxed at 100K and the 10X multiplier is lit, shoot the red drop targets for 100K each.

Ignore the two standup targets on the center right.

When the ball goes down either side outlane, try to bounce it up off the white mini posts back onto one of the rails leading to the flippers. This happens fairly often.

Amigo

First shot with left flipper, shoot the upper right lane arc [lights the spinner]; next, shoot the now-lit spinner from the right flipper. Next shot with the left flipper, shoot the center target to raise the post. ALL shots with the right flipper should be now be at the spinner, lit or not. Once spinner is lit and and post is up, if the ball is on the left flipper, transfer to the right flipper if able to do so safely, otherwise reshoot the right lane arc.

Aquarius

UTAD. The single most important thing about this game is to note where the saucer kickouts go. The skill shot is usually one of the two right-most 300-point saucers, which typically throw the ball into the right bumper. On this game, keeping the ball up top is paramount; any 300 saucer whose kickout sends the ball below is undesirable. The center saucer [left-most of the three 300 ones] usually throws the ball down past the bumpers, so avoid it. The 200 saucer will throw the ball into the center bumper, which then kicks the ball back up, possibly into a saucer. If that bumper is lit for 100, so much the better.

Since the decent points on this game are saucers and lit center bumper hits, you want as many of them as possible. Best strategy, so far as you can have one on this game, is to find a saucer whose kickout into a bumper bounces the ball back close to a saucer so that you can get two saucers plus a bumper for the price of one. Find any saucer kickouts that come close to doing this and then look to nudge the bumper rebounds into a saucer.

When the ball is on the flipper, shoot it up towards the outside of the right and left bumpers. The flippers are set so low on this game that they probably won't be

able to shoot much more central anyway, so this is your best chance to get the ball up top. Avoid the bottom standups whenever possible.

Note that this saucer-bumper-nudge-saucer strategy is the same one as on "2001".

Argosy

Skill shot: make the top center lane to open the gate [lower left outlane]. If you make it, future shots should be to the spinner from the left flipper and to the advance bonus rollover disc from the right flipper until your bonus base is maxed out at 100,000. If you don't make it, your next shot from the right flipper should be a not-too-hard shatz of the left return lane to open the gate. "Not too hard" because a strong shot will open the gate, roll up the left outlane, trigger the gate to close, and the ball will then drain out that outlane. If your ball is cradled on the left flipper with the gate not open, you have the option the shatz to the right, cradle, then shatz to the left. I prefer to shoot the spinner when it's lit [for 1000 per spin], though, rather than double-shatz.

Once the bonus is maxed at 100K, you want to get the double bonus. This is the saucer on the right. A direct shot at it rarely works - - it's too hard and will be rejected most of the time. Your best bet is to work on your next goal, lighting the saucer for extra ball [assuming they are enabled]. This is done by completing the set of 4 drop targets on the left. The rebounds from these shots will come to a flipper or slingshot, depending on how cleanly you hit them, and some rebounds into the slings will kick into the saucer for you. With any luck, the kickout from the saucer will go to the left flipper hard enough to let the ball dead bounce to the right flipper, setting up another shot at the drops. Once the bonus is maxed and doubled, these are your best option from the right flipper.

Atlantis [Gottlieb]

Skill shot: plunge the lit yellow lane. Note the lane changes with top slingshot hits, so allow for and count your bounces!

Note the right flipper has up-and-outlane risk. Don't make the mistake of holding the right flipper up when the ball is coming fast towards it and having the ball roll up and out the right side.

Hit drop targets in pairs [5000 vs. 500], shoot lit yellow lanes [3000 vs. 500] and targets [3000 vs. 500].

The 1-9 sequence is pretty useless other than that you need to collect each number to light the next number. If the ball is draining out the left side and the 5 lane is lit, try to make sure it goes there rather than into the far left outlane.

I try to shoot just drops all day and ignore the sequence. If I get some numbers, fine, but I'd rather backhand or bank off the bumpers into the drops than go for the plinko lanes since you've got that right outlane risk. If the Atlantis you're playing is one where the balls tend to come out of the plinko lanes to the center of the machine before reaching the bottom lanes, then it may be safer to shoot for them [depending on just where and how the ball comes out to the center].

Aztec

UTAD - - It's all about the spinner from the right flipper and the U-chute on the upper right from the left flipper.

Skill shot – the center lane at the top, which lights the spinner for 1000. If you miss it, try to get the center lane whenever you send the ball to the top through the spinner. Once the spinner is lit, try to get the lit side lane of the three at the top - - either the right or left lane will always be lit for advance bonus, they alternate on switch hits. Also, try to have the ball go over the top center rollover disk to advance bonus as it's bouncing back and forth between flaps and rubbers at the top.

After you've UTAD-ed enough to get your bonus up to the maximum base of 100,000, shoot for either the Z or T standup target to light the spinner lane and U-chute for Double Bonus.

If Extra Balls are on, once you have both max bonus and double bonus, you can consider going for the remaining AZTEC letters. Completing all five lights the center standup for Extra Ball. If EBs are not on, avoid the C and E shots at all times.

Key feed: the kickout from the U-chute. Depending on the strength of the kicker and the reaction of the upper right bumper, you may be able to nudge the machine so that the ball rebounds off of that bumper back into the u-chute. Done several times in a row with multiple letters lit, this can add up to a lot of easy points quickly.

Bank Shot

Skill shot is the center lane. Shoot as many different pool balls as you can; each adds to your bonus. Once you have most of the balls, shoot for the top two saucers for partial collects: they score 1000 for each lit ball on the corresponding side of the triangle.

Big Indian / Big Brave

A classic example of UTAD. The round standup targets are not worth the risk - - only 500 and one bonus advance. The vary-target is valuable enough to shoot [5K + 5 bonus advances if you hit it all the way back], but only worth risking if you're really accurate; if you miss, the rebound is likely to drain. UTAD also gives you the chance to complete all three top lanes for double bonus.

Blue Chip

Shoot the ball up top through the spinners until you are able to collect the 1, 2 and 3 lights. This lights the top right saucer for 50,000. Then STOP shooting the top long enough to shoot the 4 and 6 targets to light Double Bonus. This is more important than usual: on this game, the numbers collected are held between balls, so double bonus stays on for the rest of the game, as does your lit saucer.

Now you can go back to shooting the spinners, preferably the right one to try to get the ball in the saucer for 50K. The right spinner is only lit after you've collected the 5 target, but that's a center shot and not worth the risk; if you hit it, fine, if not, don't worry about it.

The game has wide return lanes, so shatzing from right to left to shoot the right spinner is pretty safe.

Never shoot the 7 or 8 targets; they only help you light the special, worth nothing in tournament play.

Bow and Arrow

Skill shot: center saucer for 3K and open gate. 4K and 5K are okay, but opening the gate is worth the point differential.

Use the spinners to advance bonus. Collect bonus in saucer in upper left. Once bonus 7000+ [higher or lower depending on your shotmaking % and match score situation], shoot the saucer

Key feed: saucer kickout. You may be able to repeat this shot several times via either one-timing it properly or live catching it on the right flipper, then shooting it again.

Hitting all 4 of A,B,C,D standups activates Double Bonus. Not worth shooting at due to rebound risk unless you have 3 of the 4 randomly, then go ahead and shoot the final one.

Only shoot for extra ball if turned on; otherwise too risky. If enabled, EB light activates when bonus is maxed at 10K.

Don't bother shooting the gate even if open, but do try to nudge the ball out if it's in the vicinity.

Captain Fantastic

Skill shot: top center lane when lit [alternates on switch hits, nudge as needed] opens ball save gate on lower right. Get this first. Shoot the ball up top again first chance you get: scoring both the "A" and "B" lights, which alternate opposite to the center lane, gets you double bonus. Continue UTAD until bonus is doubled and maxed [15,000 base]. Once bonus is maxed, you can, if you choose, switch to shooting the drop targets at the middle left from the lower flipper. If EBs are on, completing the targets lights the EB lane. If not, you still get decent points each time you complete the target bank. Avoid shots with the upper flipper - - if you miss low, you drain out the left, and even if you hit the targets, the rebound from this angle can go out the right outlane.

Key feed: when the ball is coming past the upper right flipper, what happens 1: when you hold that flipper up; 2: when you leave the flipper down; 3: when you have the flipper up but drop it as the ball reaches the flipper. As always, you're looking for a repeatable choice that gets the ball to a cradle, or at least a nearly-stopped-ball on a lower flipper.

Card Whiz / Royal Flush

Skill shot: go for the white joker lane, the center of the three colored lanes at the top left. This lights the long white lane next to these on the left side for 3000. The pink and green joker lanes are the next-best options; either of these lights the same-colored return lane and outlane for 3000. Try to avoid having the ball come down to the right of the triangular piece at the top of the game - - this can lead to a center drain.

Ball on right flipper: shoot left side white lane to get ball back up top into area where you can collect any remaining top color lanes until all three colors are collected. Then shoot drops until finished, then white side lane again. This is most valuable when the left side lane is lit, i.e. after you've collected the white top lane, but is still the best strategy even when it's not lit.

Ball on left flipper: transfer to right flipper until you finish all three colored lanes, then you can use it to hit the drops. Oh, shoot the jacks first (!) since the rebound off of them can go into the "open gate" lane on the right side; usually it's the rebound from the right-hand jack. Optimal order for the drops is 2 jacks, 3 queens, 2 kings, ace, ten.

You shoot the drops after you get the colors because the drop value is 1000 + 1000 for each color.

Ignore the saucer.

If you finish the drops, continue shooting the left side with the right flipper and shoot the center pad from the left flipper.

General strategy: shoot up the far left white lane whenever you have the chance; it's good for 3000 when lit, plus you'll have a chance to light the other two colors while the ball is up there. You can also sometimes get an up-and-down for 6000 total.

Key Feed: left lane below the 3000 switch - - where does it go? Does it bounce off the rubber post below it and come to the right flipper? Stay right of and miss the post and come clean to the left flipper? Ever go SDTM? Hit the post and go to a slingshot?

Once you have all three colors lit, you can start shooting drop targets from the left flipper. These advance your end-of-ball card bonus. If the ball is on the right flipper, stick with the far left lane.

Note that shooting the Jack drop targets often rebounds into the right side long lane, opening the gate. The gate saves balls going out the right outlane. This is a good shot to make from the left flipper early in the ball.

If you finish the drop targets, you can shoot the center 5000 pad target, again from the left flipper.

While you can light each of the white, pink and green lanes with the joker standup targets, don't shoot at them - - too risky compared to going up the left side. If the ball bounces into one of them to light it, fine.

Centigrade 37

UTAD for the most part. From the left flipper, it's the top saucer all day. From the right flipper, go up top just left of the left-most bumper until all 4 letters A-B-C-D are complete, then shoot drop targets. If a shot to the saucer misses and goes into the right side plinko-type lanes, keep ball out of bottom-most right lane to avoid draining; if it goes into that one anyway, the ball can still often be saved with a properly-timed nudge, but most people nudge too soon.

Letters first because this lights the drops for 5K instead of 500. Once the drops are down, shooting a lit bullseye is ok.

Cosmos

Skill shot is the center lane. Shoot first for the red mushroom bumper to zip the flippers together. Next, shoot at the three blue mushroom bumpers to light the orbit shot [upper left], then shoot that. The orbit shot is okay any time, just worth more once you've completed the blue bumpers.

Doozie

UTAD; nudge to get "open gate" and to get the ball out the gate when you can. I tend to not risk shooting at the "close flippers" standup targets since a. they're narrow shots and the rebounds, hit or miss, can be dangerous, and b. most balls drain out the sides anyway. If you get the flippers closed by accident, fine, use the closed flippers to help trap the ball up easier.

Dragon ["bao"]

UTAD, via the sides. Light the bumpers going through the top lanes: #1 lights the left bumper, #3 the center one, #5 the right. I tend to prefer soft plunging for the 5, since the ball hits the side bumpers more often than the center one, plus it's the easiest to get. Avoid the 2 and 4 lanes, they don't light a bumper and the ball falls through them to the middle without hitting any bumpers; plunges to the 1, 3 or 5 will usually hit the bumper below them at least once. Then hit the bumpers all day. Shoot the ball up the sides of the game rather than between the drop targets in the middle. Ignore the dragon drop targets themselves. If you accidentally light the extra ball stand-up in the center and EBs are on, go ahead and shoot it.

Drop-A-Card / Pop-A-Card

Skill shot is the lit top lane; one side will always be lit, soft plunge the right side, find the right plunger marker for the left. Shoot sets of drops on the sides to light the bumpers and lanes on the same side for increased values. Once you have the targets finished [they do NOT reset each ball!], UTAD to try to get the ball to deflect into one of the upper 500 lanes. Try to anticipate side drains to get the ball to rattle out of them.

El Dorado / Gold Strike

Drop targets galore. Shoot the lit ones for 5,000, unlit ones are only 500. Each target down adds 1,000 to end of ball bonus. Skill shot is to soft plunge the ball into the lit 5,000 lane at the upper right.

Key Feeds: watch the three feeds on this machine carefully! When the ball comes down the left lane into the left bumper [feed 1], does it tend to come to the left, meaning either a drain out the left or a feed the left return lane, or come out the right, to either the left flipper or down the center? You'll need to be nudging either way, but check its natural tendencies first.

When the ball comes down the right side, it can be moving slow if it fell through the left of the two lanes [feed 2] and hits the right wall or rattles unevenly down the right lane, or it can be moving faster if it falls cleanly down the right lane [feed 3]. Again, where does each tend to go? If the clean fall comes out fast enough to reach the left flipper, don't nudge. If the slow fall comes out and thinks about slipping to the right towards the inlane/outlane divider, nudge.

The drop targets on the right are rarely backhandable, but you can often do a "well-timed-flying-backhand" into them when the ball is coming to the right flipper. If it looks like the ball is headed that way in such a manner that you're not likely to be able to trap it on the flipper, give this a try.

El Toro

Skill shot: center lane, then one of the lit 1000 lanes.

Right flipper: try to graze the “light #1” mushroom bumper on the right side to light that lane on the right side of the machine; after that, it’s UTAD and nudge for the 1000 lanes.

Left flipper: try to graze “light #2” mushroom bumper on the right side and #3 on the left side to light those lanes. Once two or more lanes are lit, shoot to the upper right for the lanes. [One of your misses might light the third lane anyway.]

Ignore the El Toro letters otherwise unless extra balls are on and playable. In that case, try to finish the El Toro letters to light the top center lane to earn an extra ball. Note the extra ball lane will not always be lit even after you finish the letters; it switches on and off with the tens digit of your score.

Grazing the mushroom bumpers is better than hitting them face on: face shots can rebound in dangerous ways, while grazing hits will continue up the playfield.

If the right flipper is able to backhand the right side waterfall lanes and the feed out of the lanes is good, try repeating that shot as much as possible.

Fast Draw

Skill shot: A, B or C lane at the top. From the B lane, the ball hits the center bumper and goes ... wherever. Might go into a saucer, might go back up top. Best option of the three. From the A and C lanes, the ball should drop cleanly through the bumpers and land on the flipper below at a speed allowing you to let it bounce across and trap up on the other flipper.

Strategy: UTAD until ball 5. Try to bank the ball off one of the bumpers and into one of the saucers. Saucers score 1000 + 1000 per A/B/C letter collected.

You may see players shoot drops before ball 5. I disagree. The rebounds from the drops are risky. The one situation where shooting drops is okay early in the game is if you find that the rebound from a particular drop target goes up top and lands in a saucer. This is most likely for the 2nd or top-most targets.

On ball 5, the bonus is automatically doubled, so shooting drops is more valuable.

When shooting drops, try to hit them one at a time! While getting two at once makes better progress towards completing them, there’s no reward for that until all ten are down, when the center ones pop back up and become worth 5,000. Until then, hitting two drops at once, or worse two on one side and one or more on the other via a quick rebound, scores only 1 bonus advance! Yes, the drops advance bonus, but it’s not one advance per target down, it’s one advance per

“registered” drop. Getting more than one too quickly doesn’t register as multiple hits.

“Fast” Draw often plays slow, so be careful when dead bouncing to make sure the ball is moving fast enough to make it across. But a fast-falling deadbounce will sometimes roll all the way up the side A or C lane, thus collecting it. You want that!

Saucers score 1000 + 1000 per completed letter

Skill Shot: plunge the B; A and C sometimes go SDTM; if you plunge one of them, be prepared to nudge.

Drops advance bonus; all drops in both banks lights center drops for 5000. Second drop target from the top on each side often banks the ball into the opposite saucer.

Fireball

Skill shot: plunge so the ball stops just shy of the top left gate and falls back into the nearly-horizontal lanes to collect 3 one-thousand point switches and light the bumpers. Extreme priority to finding this skill shot! You’ll find that you may get more than half your points in the game from it. And those points, and lighting the bumpers, can ONLY be done on a plunge; there’s no way to shoot the ball up there to do it during play. The only other way to get it during a ball is to lock a ball so that you get another chance to plunge. A really good plunge will actually get you 4K, as the ball will rebound slightly at the top right and trip the bottom 1,000 switch before dropping into the bumpers.

Lock balls whenever you can! More skill shots at potentially 3K each. Sets up multiball, too, of course.

If the ball is coming towards the flippers, trap if you can, but if you must shoot, shoot the ball at the center mushroom bumper to close the flippers. If you get the ball cradled on either flipper, shoot to lock a ball.

Once the flippers are zipped, try to get the ball to settle onto the zipped flippers. If the ball is coming towards the flippers when zipped, don’t flip! Let the ball settle down onto them.

Okay, let’s assume you’ve got the ball resting between the zipped flippers. Very lightly tap one of the flipper buttons to get the ball to dribble up the opposite flipper. Then try to backhand one of the lock ball saucers. Backhands are safer

and more accurate than forehands on this game. The backhand shots are about halfway up the face of the flipper.

Once a ball is locked, repeat the skill shot. Get that ball to the flippers, and try to lock a second ball.

Once you have a ball locked in Wotan [right side saucer], try to keep the flippers zipped and just keep shooting at the Wotan saucer. With a ball locked in the saucer, the second ball will just go through the gate, deflect off the locked ball, and roll down through the rollovers, scoring 1000 for each of the mushroom bumpers you've hit [minimum 1 if you have zipped the flippers], then out the lower gate and hopefully back towards the right flipper. Trap it if you can and repeat for 1000-3000 as many times as you can.

The side mushroom bumpers will release a ball locked in the opposite-side saucer and start multiball. During multiball, try to shoot the balls back into the saucers and or rezip the flippers. Unlike most machines, this is one where you're better off not playing multiball.

The kickback is lit and unlit by buttons around the edge of the center spinning rubber disk. Don't bother shooting to light it [although a zip flippers shot often does], just enjoy a kickback if you get one.

Flicker

Spinner all day is one choice. The other is shooting the two captive balls to build up the bonus and shooting A-B-C-D to activate double bonus. If when you shoot the spinner you get decent point action in that center circle and at the end of it the ball drops out safely without draining most of the time, stick with the spinner. If not, try the bonus route.

Flip-A-Card

Ace all day. Really. The skill shot is to get one of the two Kings for 300. Best choice is to soft plunge for the king on the far right, which may also feed the Ace below it. After that, it's all about the Ace. Completing the cards only gets you a worthless special. Since we're after points, ignore which cards you have. UTAD from the right flipper to try to get J-Q-K, best King, of course. Shoot the Ace from below with the left flipper. And if the right flipper is strong enough, when cradled, try to flip the ball into the right side of the 100 bumper to bank it into the Ace lane from above.

Freedom

UTAD. Do you feel lucky? Freedom is all about getting the ball in the top saucer when “lite spinner” is lit, then shooting the spinners all day. Since you can’t control which center feature is lit, it’s a matter of luck to get the spinner item to fall your way on a shot when the ball settles into the top saucer. Fewer than half of the shots to the top do this due to the wide gaps next to the saucer. If the center wheel is currently on “lite spinners,” you can try to shoot the right side saucer for it, but that’s about the only time I’d ever deviate from UTAD.

Fun Land

UTAD through the 3-alternate-value spinners, and hope the spinners stop on 500 for you.

Grand Prix

This is one of the top players’ favorite EMs, even though it’s largely a UTAD spinner-all-day game. Pintips has it pretty well covered, but I’ll recap and add a thing or three.

Skill shot is to get the ball in the top saucer for 5K and a bonus advance. The ball will kick out towards the right bumper. You want to nudge to try to get the ball to knock down the A and B targets above and outside the bumpers. A+B lights double bonus. If you’re at a lower-level tournament or league where extra balls are on, getting A+B twice lights a return lane for an EB, three times awards the EB outright. If EBs are off, ignore the A and B targets once you have double bonus lit.

While the top saucer and the two middle-of-the-sides mini-slings below the side bonus-collect saucers each gives a bonus advance, the best way to advance the bonus is to shoot the spinners. There’s a second reason to do so: once the bonus for a side is maxed out at 50K [100K if doubled], the spinner value jumps from 100 per spin to 1,000 per spin. Most Grand Prixes have pretty active spinners, so this can be worth 20-30K per shot once lit.

Note that when you collect bonus on either side, that side’s spinner reverts to the 100-per-spin value. You can rebuild the bonus, of course, and collect it many times per ball. Let’s look at the math, though. Every 5 spins advances the bonus

by one notch of 5,000. Thus, it takes 50 spins to max out the bonus at 50K. 50 spins when the spinner is lit is also worth 50K. So there's nothing to be gained by collecting an undoubled bonus vs. continuing to shoot the spinner.

When you have double bonus lit, though, collect it whenever you can and then go back to the spinners to refill it. Your 50 spins to refill the bonus are worth 100K in this case, assuming you either eventually collect that side saucer or that side's arrow is lit when the ball drains - - the end-of-ball collect bonus applies to whichever side's arrow is lit at the time.

Ball control: use dead bounce passes a lot. [See video of Circuit Final.] Less-than-perfect live catches tend to roll up the flipper and drain out the gaps above the return lanes. Shatz passes are clearly impractical for the same reason, and post passes aren't really necessary, just shoot either spinner.

Note to TDs: this game has a tendency to "skip" 100,000's either when counting down side bonus collects or making a really zippy spinner shot. Check to make sure the scoring reels advance properly.

Key feeds: kickouts from the collect bonus side saucers. Can you let them dead bounce safely or not?

Hang Glider

UTAD through the left spinner and right random double bonus lane. Center saucer is useful [scores one bonus advance per right-side kite drop target made], but not worth the risk to shoot at.

Hi Lo Ace

Kind of a bass-ackwards UTAD game. Each card [lane or target] is worth 5000 the first time you hit it, then 500 thereafter. Get as many different ones as fast as you can. Once you've scored a card, ignore it for the rest of the game. Finishing A through 7 lights alternate outlanes for Special; finishing 8 through Ace lights alternate middle gate lanes for Special. When the middle gate special is lit, you want to get the NON-special gate lane for 5000. The only other ways to add meaningful points at that stage are by hitting the three risky button standup targets in the middle of the game, or getting the ball to go up the Ace lane; these are worth 5000 [vs. 500] if you've got 8-A. The standups aren't worth the risk.

Note that you need to “drain wisely”: on your first ball or two, out the side to collect the Jack or 6 if you don’t have them yet. Once you have A-7 complete, out the lit non-special outlane.

So, short version: UTAD; once you’ve got all the cards, try to get the ball to come down through the lit non-special gate.

Key feeds: out of those two gates, the 7-card and the 8-card.

High Hand / Captain Card

Skill Shot – make the lit top lane for 1000; the ball should then hit the 1000 bumper and rebound off it into either the Ace of Spades [right] or the Jack of Diamonds [left], spotting you a card.

Goal – complete suits to advance bonus value; bonus is 100 for one card in a suit, 200 for two cards, 300 for three cards, then leaps to 4000 for a complete suit.

Strategy – try to finish suits rather than get some of each: 12 cards total with 3 in each suit is worth 1,200 in bonus; 12 cards total in three [complete] suits is worth 12,000 in bonus.

Shot choice – from a cradle, shoot the upper suits [diamonds and spades]; you can backhand the Q-J of diamonds and A-K of spades. All but the diamond jack and spade ace can be cross-shot. When the ball is rolling down the inlane towards a flipper too slowly to transfer across, shoot the lower suits [clubs and hearts]. The top suits can be drainy when cross-shooting, so be alert. The top edge cards are restively safe if you hit them on the outer edges.

Bonus – collected ONLY at the saucer or side outlanes. Center drains do not score bonus! There are three different shots to collect bonus at the saucer, which work to different degrees on each unit depending on flipper power, machine slope and slingshot power. Shot 1 is direct into the saucer; must be very precise to avoid rim-out; try to feather the flipper a bit. Shot 2 is towards the gaps next to the ace of diamonds or jack of spades: when the ball falls back, you can sometimes nudge it off the angled middle lane guide into the straight guide and then into the saucer [or directly off the edge of the angled guide]. Shot 3 is to bank the ball off the opposite slingshot, which angles it towards the saucer but moving more slowly than a direct shot: less accurate, but less likely to rim out when not precise, and less likely to drain if you miss.

Hokus Pokus

Skill shot: two-parter here. You want to go over the top “B” or “C” roll over disks and have the ball drop through a different lettered top lane below the rollovers. You activate double bonus by getting all four letters A-B-C-D, so making two on the skill shot gets you halfway there. When possible, nudge to get the B or C lanes at the top, given a choice of those vs. A and D, since you can get the A and D letters lower down on the playfield via either the stand-up targets or the rollovers above the side spinners [preferred method].

Ball on either flipper: UTAD, through the spinner, unless the yellow “open gate” target is lit in the upper center of the game. In that case, shoot through the center spinner to try to hit it and open the gate.

Ball control: when you have a choice of which flipper to let the ball come to, take the right side. Shots with the right flipper to the top give you the chance to collect more letters through the top lanes.

When extra balls are enabled, collecting A-B-C-D twice scores it.

Avoid the A and D stand-up targets unless you just need one of them to get extra ball. Even then, I’d probably still shoot through the spinner.

Hot Line

Another UTAD game. Try to shoot the ball up the sides of the games rather than between bumpers.

Hot Tip

Skill shot: center saucer, ideally nudging so that double bonus is lit when the ball drops in. The saucer lights cycle clockwise on top sling shot hits, so count how many you’ll need before you plunge.

Right flipper: Spinner all day. Only way to get double bonus is the top saucer, so keep trying until you get it. Then keep shooting it anyway for spinner points, advances and other saucer points.

Left flipper: “T-I-P” drop targets, to light the spinner; getting all 6 drops lights the spinner.

Jack In The Box

Skill shot: shoot the lit saucer. **Important:** on most JITBs, you do this by having the ball drop through the lane opposite from the lit saucer, not on the same side! Most of the time, the ball will hit the metal rail above the saucer and bounce over the top post to the other side. The lit saucer scores 3000 and lights the drops for 1000 each in bonus. Those are way more important than going through the lit lane at the top for 500 vs. 50. The center lane, worth 500, is too great a risk of not going into the lit saucer and not worth the risk. In any case, if your ball is about to go somewhere other than into the opposing top lane, try to nudge it to not cross over [if same side] or roll to the lit side [center lane]. But don't tilt!

Strategy: when the ball is on the flipper on the side opposite the lit saucer, shoot the top arc for the saucer. When the ball is on the same side, shoot for the drop targets.

The upper flippers are good for shooting drop targets, and you can sometimes do a back-and-forth shot or two where the rebound off the target goes to the opposite upper flipper.

Whenever possible, hold up the upper flippers to cradle the ball and try to get it to roll up the lanes above those flippers.

Completing the drop targets twice scores the accumulated bonus [either in 10x100 or 10x1000] and pops the targets back up. Completing them twice scores an extra ball.

Balls in the bumpers will come back into play more often than not. When you see the ball heading for the top of a bumper, though, try to nudge so that it bounces up where one of the upper flippers can hit it. If your game has really lively bumpers, you may want to hold up the flipper on the side where the ball is rattling around the bumper - - if it comes out to the center quickly, the bumper can smack it down the middle before you can react. A raised flipper is a bit of a drain shield in this case.

[Note: I also recommend this tactic on Satin Doll, Sharpshooter, Coney Island and similar games with bumpers close to the flippers.]

Jacks Open / Jumping Jack

This is another game where the drop target value increases as you do other things, in this case, complete more lanes at the top. Drops are worth 1000 + 1000 per completed suit lane. Thus, like on Card Whiz, you want to defer hitting the drops until you've raised their value. In this case, though, completing all four suits doesn't raise the value but lowers it! You get 5000 points for finishing the

four suits and the lanes reset and relight. So, the ideal situation for shooting drops is to have three of the four suits completed.

Skill shot: get one of the four suit lanes at the top. Uncollected lanes are the ones lit, and are worth 5000; already-collected lanes are unlit and worth 500. Given a choice on the plunge, take one of the center ones since it's easier to get one of the side ones during game play.

One you have at least two suits, go ahead and start shooting drop targets. Which ones to shoot, though, are actually the opposite of what game's playfield suggests! You do get 5000 points for completing the next "hand," e.g. the two jacks, then the three queens, then the kings-queens full house, then the royal flush, but you want to "milk" the target bank for a while before you complete it. Be careful once you've shot some drops, though: it exposes bare rubber behind them. Shots into bare rubber, especially behind the center three drops, are more likely to drain than shots to the targets.

Plan on not getting the "hand" drops right away anyway. On this game, you need to think "flow" and "dead bounce" a lot. When the ball rolls down a return lane, it will be going to slow to transfer across, but may also be too fast to cradle. You'll need to be able to shoot on the fly. And since the ball will drain if you hold up the flipper to get it to roll up the wire guide, cradling isn't as easy as on modern games. Dead bouncing is the best way to get to a cradle. You'll have plenty of opportunity to do dead bounces off of shots to the drops, but be careful: a too-fast dead bounce will also roll up and out the gap above the flippers.

Note the suit lanes also light corresponding lanes at the bottom; more lights, more points.

When the ball is headed out on of the side lanes, you can often still save it with a well-timed nudge as it gets to the post below the outer edge of the bottom of the lane. Don't nudge too soon!

Jet Spin

Pintips suffices - - shoot the roto target, ignore the vary target, and if you can make the narrow left bullseye shot and the return feed from it is good, shoot that. Avoid the standups, too, unless EBs are enabled and the standup is lit for one.

Jungle Queen

The PAPA video on this is one of the better EM ones.

Skill shot: one of A-B-C, preferably the B since you can get A and C below on the playfield.

First goal: shoot the drops for bonus and to light the side lanes for 5000 [all 5 drops on one side lights the lane behind them].

Once all of the drops on a side are down, shoot for the upper saucer above them for 5000. If the shot misses, it may still roll down the lit 5000 lane below.

You can shoot the side lanes from the bottom once lit, but note these are tight shots; shooting up top is both easier and safer.

Use the upper stubby flippers to deflect the ball or shoot the lower drops, but try not to use them too much. Transfer to lower flippers whenever possible.

When the ball is coming fast towards the inside of a lower flipper, hold it up to try to get the ball to roll up the return lane into the A or C. When the ball is falling towards the center of a flipper, let it dead bounce.

Key feeds: kickouts from the two top saucers and roll downs on the right and left sides. Can you let top saucer kickouts dead bounce? Can you deflect side roll downs with the stub flippers to the opposite lower flipper?

King Kool

Tricky game for ball control. Double in-line flippers.

Skill shot is one of the four KING letters. King letters all score 1000 and add 1000 to bonus.

The spinners advance bonus, but only slowly [once per ten spins].

Try to complete the KING letters; doing so raises the bonus multiplier to 2X on balls 1-4 and from the automatic 2X on ball 5 to 3X.

Shots to the lower King standup targets are actually pretty safe; the shallow angle and not overly strong flippers means that the rebounds usually come back to the flippers, albeit at odd angles.

You can't cradle the ball on the lower of either flipper pair, and there's a high risk of scissoring [losing the ball between the flippers due to improper flip timing]! Upper flipper cradling does work, but be careful when attempting to get the ball to settle there: you risk draining up and over the post dividers.

Shoot the center bullseye standup target **ONLY** when it's lit to "open gate."

Most of the time, it's shoot the lower King letters or UTAD. UTAD is not as productive as on some other games since the spinners only build bonus slowly and shots through them often don't end up netting any King letters before they come back down. The angle of the flippers and spinners is such that crossing shots with the lower flippers often go spinner-10 bumper- back down right away; some will rattle around, but not a high percentage. Your best bet is to shoot through the same-side spinner, but you can only do that from the upper flippers unless you make a backhand shot on the fly. The angle from the upper flippers through the same-side spinners is pretty good for getting some action up top, since it tends to go between the bumpers. You might even go up the I or N lanes.

King of Diamonds

A blatant case of UTAD, ideally shooting at the 50-point K and Q standup targets.

Skill shot: get a lit lane for 50 points. I prefer the 9 and 6 lanes since after rolling through these, the ball is likely to hit a bumper and score the K or Q target, possibly bouncing back and forth to do so more than once. Balls missing the lanes completely and coming through on either side of the center bumper are the worst.

Don't even think about anything at the bottom. But if you see the ball nearing one of the side "spin roto" lanes, try to get it to go through there rather than roll off the other side of those triangles towards the center.

Key feeds: the 4 and 5 side lanes. To a lesser degree, the K and G lanes at the top as regards can you nudge the ball off the bumper below each into the nearby 50 point standup targets?

Knockout

UTAD, through either spinner. Skill shot is the center wiggly lane leading to the saucer. When the ball is up top, if you can't nudge it into the wiggly knockout lane, the two outside lanes over the bumpers with the white lights are better than the two inner lanes.

Ignore the two bottom standup targets and don't bother shooting directly at the saucer either.

Key feeds: when the ball comes down through either spinner, and how it kicks out of the center saucer.

Liberty Bell

UTAD through the spinners, other than shooting for one of the double bonus saucers when you light it.

Little Chief

UTAD, but with a few specifics.

Skill shot: the A lane at the top. B is okay, A is better. Why? A lights the upper right advance bonus slingshot, while B lights the lower left advance bonus standup target. The upper left sling is by far the safer of the two to shoot at, and the more likely to be hit accidentally as well.

Keys here are building up bonus, doubling it, collecting it, repeating.

Lots of stuff advances bonus - - top lanes, left center rollover button, standup targets.

Double bonus is earned one of two ways: shooting the center saucer [or having the ball drop into it from above]; or collecting the top center lane when lit. That lane is lit by collecting both the A and B lanes next to it.

Three saucer shots, or three lit center lanes, advances the saucer to level 3, where a drain out the lit side scores an extra ball [if enabled].

Strategy: shoot up top until you get both A and B to light the bottom gate and the top center lane. Shoot top again to get the center lane for double bonus. Then shoot the open gate to collect bonus. Repeat.

Basically, every shot with the right flipper should be up top. From the left flipper, there are 4 choices, depending on where your bonus stands. If the base bonus is not maxed out, you can either transfer [may be risky] or shoot at the upper right “advance bonus when lit” mini-sling. If the bonus is maxed, or close, but not doubled and “light double bonus” is on, you can shoot the center saucer, but this is also risky since misses can drain. And if the bonus is doubled and at or close to maximum, your top priority is to shoot the collect bonus gate at the middle right of the machine.

If you're still building up bonus, try to get the ball to the right flipper; if your bonus is built up, try to get it to the left. Learning the feeds and dead bouncing and return lane transferring are the easiest ways to do so.

Key feeds: balls rolling down the left over the 3 discs; through the upper right advance bonus lane; kickout from the center saucer.

Key Feed Caution Zone: when the ball is approaching the center saucer from above, it may encounter the post directly above the saucer. It may or may not also hit one of the two posts below the sides of the saucer. In either case, if the ball falls to the outside of the side posts, you risk a drain out that side of the machine, either directly or off the top of one of the slingshots. Nudge to avoid the ball rolling outside; if you can't prevent that, be ready to try a nudge lower down to avoid side draining. You want the ball to go to the inside of these two lower posts and drop towards and ideally into the saucer. But don't be complacent when the ball does go inside the posts towards the saucer: if it doesn't settle smoothly into the saucer, it may become a center drain.

Little Joe

Pintips has it, shoot the upper right saucer all day.

Melody

Completing numbers 1-2-3-4 is good; getting lots of saucer collects is better. The saucers kick out from one to another left to right until the right one kicks the ball towards the right flipper. If you can, try to flip from the kickout into the left saucer to repeat the process; if not, UTAD. Ignore the bottom "3" targets and the center standup 100 target.

Note there's a center post between the two central outlanes; use it, and try not to flip then - - if you do and you mis-time your flip, you'll drain either down the center or under the flipper. If you do get the ball stuck under a flipper [between the tip of the flipper and the larger posts below the tips], try to do a rapid multiple flip to get the ball to bounce off of the large post and back into play.

Saucers score 10 + 10 per lit number of that color. If you have all four numbers of a color lit, the hole awards an extra ball, if enabled. For instance, the top left "1" lane, far left central "2" lane, left side "3" standup and left "4" outlane, once collected, lights the left hole/saucer.

Miss-O

Skill shot is the center lane. While the ball is up in the bumpers, try to nudge it into hitting the top left "A" and top right "D" yellow standup targets to light the bumpers. After that, hit the center horseshoe shot when you can, go up top when you can't. The horseshoe shot is pretty narrow, so if you're not sure you're accurate enough, stick with UTAD. Likewise if the feed when the ball comes out of the horseshoe is bad, avoid it.

Balls can and do sometimes come back up into play after dropping into the zone around the bottom center bumper. Try not to flip when the ball is in there unless the ball is clearly above the edge of the flipper [in the unpainted wood area]. If you flip at the wrong time, the ball can drain under the flipper for zero points. If it drains down one of the three center lanes [ideally the middle one], at least you'll get points.

Monaco

UTAD left side through the spinner to fill up your bonus; UTAD right side to the saucer to collect bonus. Rinse and repeat.

Night Rider

UTAD through the spinners.

Old Chicago

Skill shot: the lit lane at the top; note that it switches sides with top rubber hits, so nudge accordingly for the left side or lag plunge it for the right side if you can get it to dribble in without triggering the right rubber's switch [not that easy, it's pretty sensitive].

This game is all about the bonus. Shoot the spinner on the left to advance it, collect it at the center saucer. If the ball is on the left flipper and you have little bonus, you can shoot the drops or saucer in the upper right for points. If the kickout from the saucer comes clean to the right flipper, though, either by cradle

dead bounce or live catch, you can shoot the saucer as a ball transfer. Then shoot the left spinner.

Once the saucer value is high enough, just repeat saucer shots as much as you can, using whichever technique [dead bounce, catch, trap] works best to set up a repeat shot.

This is a great game for patience and for practicing dead bounces. Many bounces will end up dropping towards a flipper, and dead bouncing is most often the best way to get control. Most Old Chicagos play slow, too, other than when the ball is in the bumpers.

Speaking of ball in the bumpers, if your bumpers are reasonably active, don't worry overmuch about shaking the game while the ball is in them; it doesn't drain through the lanes below them as often as you'd think unless the bumpers are weak.

Pat Hand / Satin Doll

This game is somewhat deceptive. Many players focus on the side joker targets or the lit 3000 target among the five in the top center bank. Nope. The big, safe[r] points here come from the rollovers at the very top of the machine. Soft plunge or skill shot to get the ball to roll over as many top rollovers as possible before then rolling smoothly over the rollovers above the upper left flipper. When the ball gets to that flipper, shoot it back up top to repeat the roll-down. Rollovers add to your bonus. Once the base bonus is maxed at 10,000, then you can deal with the center cards A-K-Q-J-10. Finishing them once lights the rollovers for 1,000; two completions lights double bonus. Once the rollovers are lit, forget everything else and throw the ball up top whenever you can, shooting along the upper left rollovers from the right flipper and straight up above the top joker from the left.

Key feeds: both sides of the top arc. When the ball dribbles off to the left, does it roll over most of the star rollovers on the left? If yes, get this as much as you can. If not, especially if it misses them all, switch tactics. When the ball dribbles off to the right, how high is the drain risk? Speed matters.

As for the two bumpers, simply hold the left flipper up at all times when the ball is in them to avoid center bumper-slam drains.

Poker Plus

It's all about the aces, 'bout those aces, 'bout those aces, but they're trouble.

Skill shot: soft plunge for the top center "light both 10X" lane; next best is for either side 50000 lane. Do not full plunge!

Shoot Aces until you've got all four, then shoot the center target. Doing this twice gives you double bonus. Besides, shooting the aces is the only way to build base bonus. Note that hitting the center target resets the ace drop targets, so if you hit it too soon, while you will build your base bonus, you'll have to start over again to set up the double.

If you survive the rebounds from the ace shots long enough to max and double your bonus, shoot them again but don't hit the center target any more! Now, shoot the ball up top to try to collect either of the side "X 10" rollover lanes when the ball comes back down; these are worth 50000 with all four ace drops down and the 10X lit.

Prospector

Built by Sonic [Spain], and playing a lot like a Williams, Prospector is a frequent favorite for Classics tournaments. It has two major strategies: Gold Bonus [primary] and Lit Spinners [secondary]. The gold bonus maxes at 2 times 100K. Build it by shooting the left orbit [or nudging the ball to fall down through that lane from above]. You can also advance it by hitting any lit gold star rollover - - at the top of the machine, when lit, either on the skill shot or from bumper action kicking it up from below, or two on each side of the playfield. Don't bother shooting the playfield star rollovers, though, especially the left side ones. The ball rebounds too randomly off these. Shooting the two on the right is okay, but you're generally better off shooting for the 5-6 if you don't have them yet, or the spinner [see below].

The 2X bonus is achieved by hitting the number 5 and 6 standup targets on the middle right side of the machine. Targets 1-4 are for lighting EB, which will almost always be turned off.

Silver bonus is built up mostly via the two center spinners: spin them enough and the bonus goes up to 10K, collectible in the center saucer or far upper right saucer. But try NOT to collect it! Once the silver bonus is maxed, one of the spinners will always be lit for 1000 per spin. That's more valuable than collecting it and relighting it. Either spinner can be hit from either flipper. Light it and rip it!

General order of business is any time the ball is in control on the right flipper and your base gold bonus is less than 100K, shoot the left orbit gold lane. From the

left flipper, shoot for the 5-6 targets. Once you've completed either task, change your shot with that flipper to the silver spinners to light them and then spin them lit.

Note that most left gold shots will continue across and into the scoop on the upper right side. This adds 5K and a silver bonus advance, making this dual shot worth at least 15K plus whatever improvement that gets you on silver. The scoop then kicks out into the bumpers.

Ball control: you can't shatz up the return lanes due to the sharp corner in the wires, but you can use the move to transfer the ball to the other flipper. Some players choose to shatz left to right to max out the gold bonus at 100K before going for the 5-6 targets as a safety play. Be careful shooting the 6, the rebound may hit the post to its left; shots at the 5 usually continue up top.

Side drains are much preferable to center: 10K plus a gold advance, worth another 10K if you're not maxed, 20K if doubled. If you're playing last, or after your main opponent, keep that in mind if that would be enough to win.

Key feed: left gold lane. When the ball comes down it, does it go safely to a flipper at all speeds, only some speeds, or never? Learn when to nudge this, if needed.

Safari

A total flailure. You'll rarely be able to get any kind of ball control, so just focus on UTAD, with grazing hits off the mushroom bumpers where possible, and through the upper right gate if you can manage it. As indicated at the top of the machine, the skill shot is to hit the top sling to light the center lane, then have the ball go in that lane.

Scuba

Scuba is an interesting case, but many feel it's more of a luck-box than most EMs. In this case, rather than collecting a set of lanes to make targets worth more, you're doing the reverse: collecting sets of targets to make the lanes worth more. Here, the five stand-up targets below the top lanes and largely hidden from the flippers by the three bumpers are the key. Completing all five of them scores 500 points and increases the value of three lanes from 50 to 300. Values hold from ball to ball, so finishing them as early in the game as possible is the key to victory. Hitting them is another matter. Only two are directly shootable from the

flippers; the center, right and left targets are behind bumpers. They're so important, though, that you must forego all else and try. You're best bet is to try to hit the two open targets on their edges so that the ball bounces sideways; the ideal situation is to get the ball zigzagging at an angle between the three bumpers and the five targets to hit as many of them as possible. Just keep shooting the ball up between the bumpers.

Once you have several lanes lit ... not much change. While you can try to shoot the ball up the right- and left-side 50 / 300 lanes from the flippers, I've found that's not easy to do with the corners there, rather than a curved lane bottom. UTAD seems to work well, trying to get all of the lanes lit, then maybe getting the ball to up-and-down some of the top lanes off the bumpers.

If you see the ball heading for the top of the left lane on the right side [the one that drops below towards the flippers, try to nudge the ball off the post over to the outer lane that feeds the plunger. That'll get you lane points plus plunge points. Similarly, on the left side, try to nudge for the outer lane rather than the inner one; the feed from the outer lane is usually cleaner to the left flipper than from the inner lane.

Sinbad

Sequence matters. You need the single white target to advance to double bonus; the two yellow targets plus the white one give you triple; white, yellows and the three purple targets gives 4X; and adding the four red drops makes it 5X. But if you have nine of the ten drops and the one you're missing is the white one ... you're still at single bonus. The order you actually hit them in doesn't matter, just which ones you've got so far. If you get the white one last but do get it before you drain, you'll still get your 5X. But obviously you want to get them in order in case you drain before you get them all.

Each completed target color set also lights the corresponding top lane for the higher value - - the white lane on the right goes from 100 to 1000, the yellow lane from 500 to 5K, purple from 1000 to Extra Ball, red one from 5000 to special [useless in competition]. If extra balls are enabled, one strategy is to shoot for the purple targets first, then flip the ball up top and try to get it to drop through the purple lane to score the extra ball.

Center spinner advances bonus 1K for every 5 spins. Green star rollovers on the upper left advance bonus 1K each when lit; top lanes light them, one for each. So go up top to advance your base bonus and get the drop targets to multiply it.

Once you finish the drop targets, the bonus will be collected, and you can rebuild it and collect it again. You'll need to redo both the base and the multiplier. The bonus counting down can be distracting if you're not expecting it; the best thing to do is go back up top while it counts. You don't have to cradle up while it does so, and anything you score while it's happening will be kept.

Sky Kings

An older mostly-UTAD game, but with an alternate strategy available. Skill shot: top saucer, which lights both side captive ball lanes. Either side is next best, lighting one or the other lane. Dribbling through the center without landing in the saucer is bad news, get nothing lit.

If you don't make the saucer skill shot, UTAD until you get both captive lanes lit.

Once you have both lanes lit, you have to choose between two primary alternatives: continue UTAD to score 3000 point saucers plus whatever random points you get while the ball is up there, or shoot the lit captive ball lanes to get 1000 to 4000 per shot, depending upon how far up the captive ball goes. There's rebound drain risk from either strategy, plus brick drain risk, so you need to figure out a few things to help decide:

1. When you hit each captive ball squarely, where does the rebound go?
2. How many points does a square hit get you, i.e. does the captive ball regularly go all the way up and down for the maximum value of 4K?
3. What happens if you miss or hit the captive ball a glancing blow?
4. When the ball comes down from up top, how likely is it to drain vs. come to a flipper or through a return lane?
5. How readily does the ball go in the saucer when put up top?
6. If you miss the top shot, what happens?

Essentially, you're doing a risk-reward calculation on the two. If the top is pretty safe and the saucer friendly, I tend to take that route. If hits to the captive ball fall cleanly into the return lanes, that makes these a good [or better] choice. YMMV; choose wisely.

The EB lights come on once you max the bonus [15K]; only one side is lit at a time. Take it if they're on and you can play them!

Double bonus is last ball only.

Skylab / Spacelab

Mostly UTAD, via banking the ball off any SKYLAB letters you need. Lit lanes give one bonus advance, completing Skylab gives two advances. Bonus is doubled on last ball. Ignore the captive balls until you have maxed your bonus. At that point, getting all of them to the lit side for an extra ball [if enabled] or a special [if worth points - - check the instruction card to see] is your best bet.

Snow Derby / Snow Queen

UTAD spinners. Scoring on this game is extremely last-two-balls biased. Balls 1, 2 and 3 are single bonus, i.e. 50 points per lap; ball 4 is 100 double at per lap; ball 5 is at 200 per lap. In addition, the top 50-point saucers add one lit saucer each ball, and other than the bonus, this is where the next most of your points will come from. If you can, you want to get into a “ball in lit saucer kicks out and bounces back off a bumper into a lit saucer” rhythm on balls 4 and 5 in particular. You’ll find that most of your score is on balls 4 and 5.

Getting the ball to exit out the right side lane in the middle of the machine, where it goes back to the plunger lane, is desirable whenever you can do it.

Soccer

UTAD - - through the spinner from the left flipper, to the collect bonus saucer or, if the ball continues past that, the add bonus saucer. Rinse and repeat.

Space Race

This and Dragon [the EM, not the SS] are two games from Zacaria that have a completely different “feel” to them - - heavy. As on many EMs, Double Max Bonus is your goal here. Advance bonus with drops and standups behind them. Double bonus when you finish the drops.

Skill shot – either of the top angled lanes.

Ball control: balls coming through the inner return lanes will be moving too slowly to transfer; you’ll have to cradle or flip away.

Watch out on the return lane – outlane setup here: the divider between the two return lanes is higher than the one between the middle lane and the outlane, so balls that bobble off it are predisposed to drain unless nudged.

Strato-Flite

UTAD, via bank shots off the A and D standup banks.

Skill shot: land in the top saucer, ideally for open bottom gate [1st choice] or 5000 points [2nd choice]; open upper gate is okay, but the ball goes through that far less often than the bottom gate; 500 points is the worst option. The small slings on either side of the saucer at the top cycle its value, so try to get the optimal number of back-and-forth bounces on them to light the gate choice. The right-hand sling also scores a bonus advance, so multiple back-and-forths leading to a drop into the saucer are better than a clean drop into it.

Completing a set of letters [A,B,C or D] increases your bonus multiplier, one set for 2X, two sets for 3X. Additional sets only lead to special, not worth anything in tournament play; focus on completing two sets.

If the lower gate is open, don't try to avoid that gate if the ball is heading that way, take the gate and 5000 points plus the chance to plunge back to the top.

Balls coming down the left return lane almost always do so fast enough to pass them over to the right flipper for a more controlled shot up top.

Super Straight

Skill shot – plunge the center lane for 5K + advance bonus; only one of the side lanes advances bonus [lit, alternates sides], and they're only worth 1K.

Strategy - Initial

Left flipper: shoot the right gate to go back up top for more bonus advances.

Right flipper: shoot the Jack standup targets to light bonus collect; even if you miss, you may hit other standups that will be useful.

Strategy - Changes

1. When you have 70K+ bonus AND bonus Collect lit, change your Right shot to Bonus Collect saucer. Maintain gate shot from Left.

2. If you get the Spinner lit before maxing out your bonus, change Left to shoot the spinner [assuming the spinner spins well]
3. When you have bonus maxed out at 100K, change Left shot to shatzing right inlane to Right shot at saucer.

Note that the inlanes on this game and similar vintage ones like Hot Tip and Mars Trek are wide enough to make shatzing relatively safe even for those players not as adept at this type of shot. In fact, this is a good game to learn this skill on: start with games like this with wide gaps between the bottom of the return lane and the bottom of the slingshot above it, then work your way into narrower ones like High Speed.

If you happen to hit one of the Ace targets along the way [which often happens when you miss the gate shot on the right or the Jack shot on the left], go ahead and shoot the other Ace if you get the chance. The two aces light a return lane [it alternates] for Double Bonus. Otherwise, avoid the Aces due to rebound risk.

No real “key feeds,” but take note of the kickout from the Collect Bonus saucer on the left.

Surfer / Surf Champ

Skill shot: the left orbit shot is fine if the feed from it is good. If the feed is not consistently good, go for the lit lane of the four at the top instead.

Basic strategy is to shoot the drop targets and top saucer while having the ball go over the central star rollovers en route. The stars increase the saucer value [top right, base value 1000] by 1000 per rollover collected. Shooting the center rollover should go through the spinner. Shooting the two left rollovers should continue on to get a drop target or two. Shooting the right rollover is close to the shot for the saucer. The riskiest rollover is the second from the right, which continues on into the right bumper; watch out for the rebound!

Top lanes and upper left lane advance bonus, maxes at 15000. Double bonus is in two steps: first, get all five rollovers to light the left side center and right side center lanes; then get the ball through the lit lane to increase the multiplier. If you're on the last ball, where the bonus is already doubled, this advances you to triple bonus.

Important feeds to observe: ball coming down the top left advance lane behind the drop targets, and ball coming out of either side lane. You may have to nudge.

Target Pool

Main goals

1. Get the bumper lit for 100 points by making the 6, 7 and 8 lanes at the top.

Good: find the skill shots for each top lane. Plunge the 6 first, soft plunge the 8 on the next ball, and get the 7 last to get the sure 100 points when the ball hits the bumper after going through it.

Better: Plunge for the 7 lane first. Why? You'll find that [bank-] shots back to the top of the game will sometimes go back up through one of the top lanes. This happens far more often for the 6 and 8 lanes than for the 7 lane. If it does, try to nudge the ball into any other lane you don't already have when it comes back down.

2. Complete all but 1 (!) of the remaining numbers 1-15 around the sides of the game. Why all but 1? Because if you get them ALL, the inlanes and outlanes change value from 100 points to Special. In tournament play, Special is worth Zero [see video of Pinburgh 2016]. If you do get them all, well, too bad, there's no way to un-do it.

3. Shoot the lit arrows, worth 300 each; more numbers collected means more lit arrows.

Ball control

The inlanes usually will feed the ball down fast enough to transfer it to the other flipper; do so if there are lit arrows you can shoot from the other side but not from the return lane side.

Likewise, use dead bounces and catches to get the ball to the shoot-lit side.

In general, shoot the ball up top all the time and don't bother to shoot lit arrows on the center bank. Going topside gives you a chance to light the bumper if it's not lit, to hit it if it is, and to collect more numbers to light arrows.

Drain Shots

The standup targets on the right and left ends of the center bank. The ONLY time you should ever shoot one of these is if all three of these are true:

- A. it's lit for 300
- B. you're the final player
- C. you need less than 300 points to win

The center bank's center target can be drainy, so don't shoot it even if lit. The other center bank targets tend to be fairly safe, but I still prefer to go up top all day.

Nudging

You want to nudge up top at times to get the ball to hit the upper slings hard enough to get a good kick off of them; this calls for a push nudge. You want to do side nudges up top as the ball is approaching the top-bottom divider necks [edges of the slings above and center target bank below] to get the ball to come down from the top *along the face of the lower slingshots*. If you see me kicking people's asses on Target Pool, this is one key reason. The most common drains on the game, besides those two targets I warned you about, are rolling down the sides directly from the upper playfield, slingshot cross-drains on the lower playfield, and soft downward bounces off of the arrow targets near the neck that go down the middle. When you see that the ball is coming down and is either going to hit one of these arrows or hit a slingshot too softly to trigger it and then roll into one of the arrow standups, try to gauge the angle of attack. You want the bounce off the arrow target to go parallel to the lower slingshot face and close enough to it so that the ball rolls down its face to the flipper without triggering the slingshot.

Time Zone

Easier said than done. Skill shot is the collect tunnel lane at the top, but you need to time your plunge so that the tunnel is lit for 5000 when you collect it. The tunnel cycles through values of 1000 to 5000 [look down at the tunnel, you'll see it], stopping when the ball hits the "stop tunnel" switch near the top of the plunger lane. You can try to soft plunge just up to the stop switch first, then go for the collect plunge after that, but I've found it's harder to accurately time a soft plunge than the near-full plunge that gets the center collect lane. If you do the one-step near-full plunge, line up the plunger on the right spot on the plunge markers first, then time your release while watching the tunnel lights cycling below.

Once the ball is in play, your goal is simple: shoot the center red standup target all day to collect tunnel value so long as the value is 3000 or more. If the tunnel is on 1000 or 2000, you're usually better off shooting the ball towards the gate, if open, the collect bonus on the left [which shoots the ball back up top], or just shooting the ball up top towards the "start tunnel" saucers to change it. If your plunge fell into one of the start tunnel saucers, or the ball got there after rattling

around in the bumpers, the tunnel value will stop again when you hit that center target, or when the ball goes into the “collect tunnel” pocket on the left side.

Ball control and soft flips are the keys here. Once you’ve hit the center target, which raises the center post, you want the ball to settle back down onto a flipper to repeat. The easiest way is to use dead bounces or drop catches to get the ball to settle into the hollow between the tip of a flipper and the center post. Once it’s there, use very light flipper taps to try to hop the ball across to the other flipper just high enough to let you cradle it, but not so hard that it goes up and away or triggers a slingshot. It’s delicate and requires patience. Breathe.

Note that there are two “down post” white buttons near the tops of the slingshots. Obviously you want to avoid them; equally obviously, you need to not be caught off guard if the ball triggers one of them and be ready to flip or try for a trap.

While you can use the two “start tunnel” standup targets to the side of the center collect target to change the tunnel value, the rebounds off of those targets can be really risky, so I’d avoid them.

The two gates are useful, scoring both points and collect tunnel; take them if you get the chance, but don’t go out of your way shooting for them when you have a good tunnel value lit. Each of the two top saucers opens one of the gates.

Triple Action / Star Action

UTAD, with optional spinner risk once your base bonus is maxed.

The skill shot is to hit as many of the top disk “advance bonus” rollovers as possible before having the ball drop into the lit advance spinner lane. The lit lane changes as the ball hits the side rubbers at the top.

After that, go up top until your base bonus is maxed out at 10000. Once the base bonus is maxed, if you’re close to completing the center spinner to increase the bonus multiplier, go up top again and try to get the lit lane to finish it.

The fastest way to increase your bonus multiplier is to shoot the spinner. If the spinner is not too lively, though, ignore it and stick with UTAD for the lit lane. I’d say to ignore the spinner completely, except that UTAD will eventually drain when the ball comes out of the top bumpers the wrong way towards those gaping no-return-lane sides or straight down the middle, so since one good whack to the spinner can be worth several top shots as far as advancing the spinner goes, it can be less risky statistically to take one spinner shot than those several top shots. The spinner shot is best done when the spinner posts are near the 3

o'clock and 9 o'clock positions to maximize the number of spins a hit to it gets you. Also, try to hit the outside edges of the posts: you want the rebound to go sideways and up rather than down towards an outlane.

Ignore the A-B-C-D completely. I much prefer the add-a-ball version of this game [Star Action], since it brings the A-B-C-D into play - - completing them twice scores an extra ball in that version.

Once your bonus is at 30000, if the spinner is lit for 100 points per spin, spinner all day until you drain. Otherwise UTAD until you drain.

Volley

This is a "targets worth more based on lit lanes" game, so focus on lighting lanes first. Try to make one on the skill shot plunge; it's best to get one of the two side lanes first [blue or green], since you're more likely to get hits on those colored targets below first. Each colored lane lights the matching colored targets and bumper. When the ball comes down, shoot it back up top; if you're lucky or good, you'll get the ball back above the top lanes where you can try to nudge it into one you still need. If not, try to use the bumpers to nudge the ball up top either around the edges or going upwards through one of the top lanes.

Once you have all 3 lanes lit, it's time to go for the drop targets. They're worth 500 unlit, 5000 lit. Note that getting all three lanes also lights the top center lane for 5000. But shooting the targets isn't as simple as it sounds. Yes, you get 5000 for hitting a lit target, but this game registers target hits slowly. If you hit two at once, it will only register as one. If you hit one or two blue or green targets and the ball then rebounds into one or two yellow targets, you'll probably still get only one 5000 hit registered! So you're often better off shooting the yellow targets first, trying to pick them off one at a time, then doing the greens and the blues one by one.

The targets do not reset until you complete all three banks. If you're getting close to doing this, don't worry about hitting more than one at a time, finish them off so that you have 15 fresh targets to shoot at.

Watch out when you miss a target or otherwise hit the rubber behind the target banks; those rebounds can be dangerous.

The most challenging [and stressful!] part of this game is dealing with balls coming down the upper half of the sides, i.e. behind the blue and green target banks. You clearly want the ball to drop into the return lane rather than the outlane, but guessing and timing the nudging or not on this is a true art form not

easily mastered. Avoid any shots that would have the balls go in there as best you can [e.g. don't hit the outside edges of the end yellow targets], and be alert and ready to nudge when the ball is coming down from the top of the playfield. The one caveat I would make here is if the ball looks like it will either go in the side lane or rattle off the top of the target bank divider towards the center, remember that even side lane plus outlane is better than straight down the middle.

Wizard

UTAD pretty much. A few other things worth noting:

Skill shot: get the top saucer, but better yet, try to go over the right star rollover to light Flag 4 before having the ball drop into the saucer. This will then light the spinner, which you'll be shooting all the time as part of the UTAD strategy. Rollover 1, which lights the Bumpers flag, is not as good as that, but still better than getting neither rollover. Since the ball always goes over the flags when kicked out of the top saucer, you'll thus light the spinner right away.

Flag notes:

Flag 1 – lights Bumpers for 100 [vs. 10]

Flag 2 – lights Center Target for 3000 [vs. 500]

Flag 3 – lights Double Bonus

Flag 4 – lights Spinner for 100 [vs. 10]

On any shot to the top, your priority is to nudge the ball into the saucer for 3000 + 400 when it is kicked out over the four flag rollovers + whatever features your flags activate. Getting one of those star rollovers at the top is nice if you're missing that flag, but don't let that make you miss the saucer.

Key feed: Flag exit. Ball control is king here. When the ball comes down the flags lane, you want to get it back to the right flipper by whatever means works best. This could be letting it dead bounce off the left flipper to the right, drop catching on the left, then tap- or alley passing to the right, live catching on the right, or some variation of these. It all depends on how fast the ball comes down the chute and where it goes when it does. Nudge as needed if it doesn't come cleanly to one of these options.

If you have a strong enough left flipper, you may be able to backhand the spinner. If so, consider yourself lucky - - you can now make your priority shot from either flipper without risking a transfer.

If you have your base bonus close to maxed out [which is at 19000] and have not yet doubled it, you can shoot at the Flag 2 standup target at the lower left to activate that flag, then go up top to the saucer or otherwise into the flag lane to activate the doubling. Otherwise, it's generally not worth shooting at any of the four flag standups. Likewise, don't bother to shoot the 5000 recessed standup target unless you're really accurate and just need those points to win - - missed shots to it often drain, and hits to it can drain, too.

If you find the Wizard in your tournament has flippers too weak to consistently make the UTAD shot through the spinner, or if you get a consistently bad feed out of the flags lane, avoid playing the game if possible.

If Extra Balls are on, you get it by maxing the bonus at 19000, then shooting the ball to the top through the spinner.

Zig Zag

UTAD, preferably along the sides; they're safer and easier to shoot than the center. Pray for bumper and saucer love. When draining out the sides, try to get "rack ball" rather than the "special when lit" lane; racking all nine balls lights all of the saucers.