"TROUBLE SHOOTING GUIDE"

BALLY ELECTRO-MECHANICAL

SLOT MACHINES

INDEX

DEAD MACHINE

PROBLEM

FUSE BLOWS ON THE SECOND OR SUCCEEDING COINS. ELECTRICAL ARCING OCCURS IN THE TOP RIGHT CORNER OF THE TOP UNIT JUST BEFORE THE FUSE BLOWS.

SOLUTION

CHANGE THE B25-925 SOLENOID IN THE STEP UP UNIT IN THE TOP UNIT. THIS SOLENOID HAD A SHORT IN IT. IT WAS CAUSING AN ARC IN THE SWITCH IN THE TOP RIGHT FRONT OF THE TOP UNIT (AS YOU FACE THE MACHINE). IF YOU HELD THIS SWITCH DOWN A FUSE WOULD BLOW BECAUSE OF THE BAD SOLENOID.

PROBLEM

MACHINE DEAD

SOLUTION

1. PRESS RESET BUTTON (BEHIND THE HOPPER). SOMETIMES THERE IS A BAR THAT RUNS UNDER THE HOPPER AND TOUCHES THE RESET BUTTON. PUSH THE RESET BAR.

2. CHECK THE FUSES.

3. ON ONE MODEL (AND PROBABLY OTHERS), THE 847 CONTINENTAL, THERE IS ANOTHER RESET BUTTON INSIDE THE DOOR ON THE UPPER RIGHT CORNER OF THE CABINET IN THE FRONT.

PROBLEM

FUSE BLOWS, SOLENOID BURNS UP, RESISTER BLOWS.

SOLUTION

CHECK THE B25-925 SOLENOID IN THE HOPPER AND SEE IF IT HAS BURNED UP (LOOKS COOKED). ALSO SEE IF THE RESISTOR NEARBY IS BURNED UP. IF ONE OR BOTH OF THESE CONDITIONS EXIST IT WAS PROBABLY CAUSED BY THE BRAKE STICKING TO THE HOPPER (NEW STYLE-MOTOR IS IN BOTTOM OF HOPPER) HOUSING. THE RAKE IS STICKING TO A GUMMY SUBSTANCE. SCRAPE OFF GUMMY SUBSTANCE AND SPRAY WITH WD40. REPLACE SOLENOID AND RESISTOR.

PROBLEM

SHORTS. THESE CAN DRIVE YOU CRAZY FASTER THAN ANYTHING. HERE'S A VERY SMALL LIST OF PLACES WHERE THEY ACTUALLY OCCURRED.

SOLUTION

1. CHECK THE 2 BULBS THAT LIGHT UP THE PAY TRAY. THESE BULB HOLDERS FOR THE "63" BULB ARE THE MOST COMMON CAUSE OF SHORTS.

2. WHEN A MACHINE WOULD NOT PAY OR RESET A WHITE WIRE WAS FOUND SOLDERED ONTO THE COIN LOCKOUT COIL (BEHIND THE COIN REJECTOR). THE WIRE WENT FROM THRE TO A SCREW IN THE CABINET. THIS SHORTED THE MACHINE. UNHOOK THE WIRE AND ALL IS O.K.!
3. CHECK THE "CALL ATTENDANT" BUTTON ON THE INSIDE OF THE DOOR. IF IT IS BROKEN IT WILL CAUSE A SHORT.
4. LOOK FOR BARE WIRES COMING FROM THE CABINET TO THE DOOR.

PROBLEM

MACHINE GOES DEAD TEMPORARILY AND THEN COMES ON AGAIN DURING PLAY OR DURING A PAYOUT.

SOLUTION

1. ONE OF THE FUSE CAPS BEHIND THE HOPPER IS LOOSE. TIGHTEN UP THE FUSE CAP.
2. THE LINE CORD IS NOT FIRMLY ATTACHED WHERE IT ENTERS THE MACHINE. THE LINE CORD CONSISTS OF THREE WIRES. ONE OF THESE WIRES IS LOOSE AND NEEDS TO BE RE-SOLDERED.

PROBLEM

FUSE BLOWS AS SOON AS MACHINE IS TURNED ON.

SOLUTION

THIS COULD BE A SHORT IN MANY DIFFERENT PLACES. THE MOST FREQUENT PLACE IS IN THE TWO 63 BULB LIGHTS IN THE BOTTOM OF THE FRONT DOOR WHICH ILLUMINATE THE PAYCUP.

IN ANOTHER CASE A LOOSE SCREW HAD FALLEN OUT OF THE TOP OF THE FRONT DOOR AND RESTED IN BEHIND THE COIN RELAY SWITCH. IT WAS WEDGED IN BEHIND THE SWITCH AND JOINED 2 SWITCHES TOGETHER. THE COIN RELAY SWITCH IS ON THE LOWER LEFT SIDE OF THE REEL MECHANISM AT THE BACK CORNER.

PROBLEM

THE REELS FLEURESCENT LIGHT WON'T GO ON.

SOLUTION

1ST - TRY NEW STARTERS
2ND - TRY A NEW BULB
3RD - CHECK THE WHITE WIRE AND THE WHITE BROWN WIRE IN THE UPPER OF TWO PLASTIC PLUGS ON THE INSIDE OF THE FRONT DOOR. ONE OF THE WIRES MAY NOT BE MAKING A GOOD CONNECTION. IF THERE ARE TWO BALLASTS SIDE BY SIDE AND ONE IS COLD, IT IS ONE OF THESE WIRES.
4TH - CHANGE THE BALLAST

LIGHTS

PROBLEM

ALL SMALL LIGHTS ARE OUT. THE 10 AMP FUSE BLOWS OR DOESN'T WORK.

SOLUTION

1. CHECK FOR A BURN MARK ON THE LEFT FRONT SIDE OF THE MACHINE WHERE THE BUNDLE OF WIRES TOUCH THE DOOR FRAME JUST BELOW THE UPPER HINGE. OFTEN THE BUNDLE OF WIRE WILL GET PINCHED WHEN THE DOOR SHUTS. EVENTUALLY, THE INSULATION WILL BREAK AWAY AND THE BARE WIRE WILL EITHER BREAK OR SHORT OUT AGAINST THE CABINET FRAME.
2. ON THE LEFT SIDE OF THE REEL MECHANISM THERE ARE 2 PINS ABOUT 1 1/4" STICKING OUT. THEY HAVE CREAM-COLORED INSULATORS AROUND THEM. IF THE BACK ONE HAS WORN THROUGH AND THE CONTACT IS TOUCHING THE METAL PIN, THE FUSE WILL BLOW.
3. THE FUSE ON THE LEFT THAT CONTROLS ALL SMALL LIGHTS (6 VOLT LIGHTS) MAY BE BAD. IF IT IS GOOD IT MAY NOT BE MAKING CONTACT WITH THE FUSE CAP. THE SPRING IN THE FUSE CAP MAY NEED TO BE PULLED OUT FARTHER.

PROBLEM

LIGHTS DON'T GO ON FOR A COIN AFTER THE FIRST COIN LIGHTS HAVE ALREADY COME ON (IN A MULTIPLE COIN MACHINE).

SOLUTION

CLEAN THE UPPER UNIT STEP UP POINTS.

PROBLEM

ONE LIGHT (SOMETIMES A COUPLE) DOESN'T GO ON IN THE UPPER UNIT.

SOLUTION

1. CLEAN THE SOCKET CONTACT.
2. CLEAN AND TIGHTEN THE CONTACT STACKS OF THE UPPER UNIT. TWO CONTACT BLADES BARELY OR LOOSELY TOUCHING WILL CAUSE A LACK OF CURRENT GOING TO A BULB.
3. CLEAN AND/OR TIGHTEN THE CONTACTS ON THE STEP UP SPIRAL.

PROBLEM

UPPER UNIT LIGHTS ALL GO OFF AFTER BETWEEN 1 AND 25 PULLS OF THE HANDLE. FUSE BLOWS.

SOLUTION

THE TROUBLE IS IN THE FUSE HOLDER. THE CONTACT BETWEEN THE FUSE CAP AND THE FUSE IS LOOSE CAUSING ARCING. THIS EVENTUALLY MAKES THE FUSE BLOW.

LIGHTS (CONTINUED)

PROBLEM

MACHINE DEAD

SOLUTION

1. CHECK FUSES
2. CHECK RESET BAR TO TIMER (BEHIND THE HOPPER)

PROBLEM

ON A 5 LINE MACHINE LINES 2,3 & 5 LIGHT UP ON THE DOOR WHEN ONE COIN IS PUT IN. ONLY THE MIDDLE LINE PAYS OFF. ON THE SECOND COIN, THE 5TH LINE LIGHT GOES ON AND THE 2ND AND 3RD STAY LIT. ON THE 3RD COIN ONLY THE LINE 2 LIGHT STAYS ON. ON THE 4TH AND 5TH COIN ALL LIGHTS GO OUT. THESE THINGS ONLY HAPPEN ON THE LIGHTS ON THE DOOR AND IT OFTEN HAPPENS EVERY LITTLE WHILE. THE LIGHTS UP ABOVE ARE O.K.

SOLUTION

OPEN THE DOOR. ON THE INSIDE OF THE DOOR THERE ARE 2 WHITE PLUGS.
THE UPPER PLUG HAS A LOOSE OR BROKEN WIRE (BLUE). IF THE BREAK IS INSIDE THIS PLUG A WIRE CAN BE RUN RIGHT AROUND THE PLUG. THIS SAVES THE TIME OF REPLACING THE PLUG OR FIXING THE PLUG.

PROBLEM

ON A 5 LINE <u>PROGRESSIVE JACKPOT</u> MACHINE THE LIGHTS IN THE UPPER UNIT DO NOT WORK AT ALL AND ON THE REEL GLASS ONLY THE 1ST COIN LIGHT (AND MAYBE ONE OR TWO OTHERS) COME ONE.

SOLUTION

IN PROGRESSIVE MACHINES THERE ARE USUALLY TWO TOP INSERT PLUGS (PLUGS ABOUT 6" LONG). THESE BECOME CORODED AND MUST BE SCRAPED AND CLEANED AND ADJUSTED SO A GOOD CONTACT IS MADE.

PROBLEM

ON A HOLD & DRAW MACHINE THE HOLD LIGHT DOESN'T GO ON AND STAY ON WHEN IT IS SUPPOSED TO.

SOLUTION

LOOK FOR BROKEN WIRE FROM THE "HOLD" CIRCUIT SWITCH ON THE RIGHT REAR OF THE REEL MECH TO THE SWITCH ON THE BACK OF THE CIRCUIT BOARD ON THE HOPPER. CHECK BROWN WIRE WITH RED TRACER WHERE IT ENTERS THE SWITCH IN THE HOPPER.

PROBLEM

LIGHTS ARE ALL DIM OR DON'T LIGHT AT ALL (ONLY APPLIES WHERE THE MACHINE NEVER WORKED).

SOLUTION

THE MACHINE MAY HAVE BEEN USED WHERE 220 VOLTS WERE USED. TO CHANGE BACK TO 110 THERE IS SOMETIMES A PLUG NEAR THE TRANSFORMER BEHIND THE HOPPER. MOVE THAT PLUG TO THE OTHER RECEPTACLE. USUALLY YOU UNPLUG THE PLUG AND MOVE IT TO THE RECEPTACLE JUST ABOVE.

WHERE NO PLUG EXISTS, CHANGE THE WIRING AT THE BACK OF THE TRANSFORMER. FROM LEFT TO RIGHT LOOKING INTO THE MACHINE THE WIRES AT THE BACK OF THE TRANSFORMER ARE 1,3,5,7, AND 9. TAKE THE WIRE OFF 9 AND SOLDER IT TO 7. BREAK THE JUMPER WIRE GOING FROM 3 TO 5. SOLDER A WIRE JOINING 1 TO 3 AND ANOTHER WIRE JOINING 5 TO 7.

PROBLEM

LIGHTS OUT

SOLUTION

1. CHECK FUSES
2. PUSH RESET BUTTON BEHIND THE HOPPER.

PROBLEM

"WINNER PAID" LIGHT NEVER GOES OUT.

SOLUTION

THE

PULLED. IT IS LOCATED IN THE HOPPER BEHIND THE BROWN BAKELITE PAYOUT CIRCUIT BOARD. FACING THIS BOARD IT IS LOCATED ON THE LEFT SIDE BEHIND BOTH THE BOARD AND THE METAL PLATE THE BOARD IS ATTACHED TO. CLEAN THE SWITCH AND BEND IT SO IT OPENS AND CLOSES.

LIGHTS (CONTINUED)

PROBLEM

"INSERT COIN" AND "COIN ACCEPTED" LIGHT DON'T WORK.

SOLUTION

ON THE LEFT SIDE OF THE REEL MECHANISM (LOOKING FROM THE FRONT OF THE MACHINE) THERE IS A BANK OF 5 SWITCES AT THE BACK LOWER SIDE CORNER NEAR A SOLENOID. THE SECOND SWITCH (FROM THE FRONT OF THE MACHINE) IS THE COIN SWITCH. THIS SWITCH NEEDS TO BE CLEANED AND/OR BENT SO IT OPENS AND CLOSES PROPERLY.

PROBLEM

ALL FLEURESCENT LIGHTS ARE OUT.

SOLUTION

OPEN THE FRONT DOOR. BACK BY THE HINGES THERE ARE 2 WHITE PLUGS. THERE IS A LOOSE OR BROKEN WHITE WIRE ON OR AROUND THE UPPER PLUG.

IF THE PROBLEM IS INSIDE THE PLUG, JUST RUN A WIRE AROUND THE PLUG.

THIS IS QUICKER THAN REPLACING OR FIXING THE PLUG.

COIN PROBLEMS

PROBLEM

ALL COINS NOT ACCEPTED - THEY RETURN TO THE PAY CUP.

SOLUTION

1. THE COIN LOCKOUT COIL (BEHIND THE COIN REJECTOR) IS NOT BEING ENERGIZED. FOLLOW THE ORANGE (COMMON) WIRE GOING FROM THE COIN LOCKOUT COIL TO THE WHITE PLASTIC MOLEX PLUG ON THE DOOR. THERE ARE TWO MOLEX PLUGS ON THE DOOR - THIS IS THE LOWER ONE. THE COMMON WIRE IS PROBABLY LOOSE IN THE PLUG AND NEEDS TO BE RE-ATTACHED. NOW POWER WILL GO TO THE COIN LOCKOUT COIL.
2. THE DASHPOT SWITCH ON THE HANDLE SIDE OF THE REEL MECHANISM IS NOT CLOSING. BEND THE BRACKET THAT HOLDS THIS SWITCH TOWARD THE BACK OF THE MACHINE. THIS MAKES THE SWITCH CLOSE SOONER.
3. THE ROCKER ARM IN THE COIN REJECTOR FELL OFF. PUT IT BACK ON SO THE COIN WILL GO DOWN THE RIGHT PATH.
4. CLEAN CONTACT ON THE PAYOUT RELAY (THE STACK OF SWITCHES AT THE BACK OF THE HOPPER).
5. IF A BIG JACKPOT HAS JUST BEEN HIT, IT MAY BE NECESSARY TO OPEN THE DOOR AND FLICK THE COIN SWITCH ONCE. CASINOS DID THIS WITH A KEY TO RESET THE MACHINE AFTER A BIG JACKPOT.
6. SEE IF THE FUSE IS BLOWN. IT IS USUALLY THE MIDDLE ONE OF THREE IN BEHIND THE HOPPER.
7. FAULTY MICRO SWITCH ON THE HANDLE RELEASE ASSEMBLY. THE 50 VOLTS WERE NOT REACHING THE HANDLE SWITCH SOLENOID.
8. THE DOOR MUST BE CLOSED BEFORE A COIN WILL BE ACCEPTED. TO AVOID THIS HAPPENING, LOOK AT THE BUTTON SWITCH AT THE BOTTOM RIGHT CORNER AT THE FRONT OF THE CABINET. WHEN THE DOOR CLOSES IT PUSHES THIS SWITCH. THERE ARE 2 TERMINALS STICKING UP. TAKE THE WIRE OFF THE BACK TERMINAL AND SOLDER IT TOGETHER WITH THE WIRE ON THE FRONT TERMINAL SO BOTH WIRES ARE TOUCHING THE FRONT TERMINAL. IT IS VERY UNUSUAL THAT THIS WOULD BE THE CAUSE.
9. SEE IF THERE IS A LOOSE CONNECTION WHERE THE WIRES ATTACH TO THE BOTTOM OF THE FUSE. IN ONE CASE, A 5 LINE MACHINE, 2 OR 3 WIRES HAD BECOME LOOSE ON THE FAR LEFT FUSE.
10. SEE IF A SWITCH IS OPEN (IF SHOULD BE CLOSED). LOOK ON THE LEFT SIDE OF THE REEL MECHANISM (AS YOU FACE THE MACHINE). IN THE BACK CORNER THERE IS A PIN STICKING OUT 1 1/2" FROM THE BACK AND 4 1/4" FROM THE BOTTOM. RESTING AGAINST THIS PIN ARE ONE OR MORE SWITCHES. IF ONE OF THESE IS OPEN WHEN THE MACHINE IS AT REST THE CIRCUIT IS BROKEN. BEND THE SWITCH SO IT IS CLOSED. CLEAN THIS SWITCH.

PROBLEM

COIN ACCEPTED BUT NOT REGISTERED IN TOP UNIT. BUZZING HEARD IN TOP UNIT - SPORADIC REGISTERING.

SOLUTION

1. THE SOLENOID MOUNT IS LOOSE. TIGHTEN THE BRACKET MOUNT OF THE STEP UP SOLENOID IN THE TOP UNIT.
2. IF SOMETIMES THE COIN IS REGISTERED IN THE TOP UNIT, CLEAN THE LINE UNIT STEP-UP UNIT. IT'S THE TOP RELAY UPPER RIGHT AS YOU LOOK AT THE MACHINE. CLEAN ESPECIALLY BETWEEN THE METAL ARMATURE AND THE SOLENOID.
3. SEE ALSO PROBLEM "COINS DON'T STEP UP CONSISTENTLY, ETC."
4. CHANGE THE STEP-UP SOLENOID (B25-925). IT HAS BECOME TOO WEAK TO PULL THE STEP-UP LEVERS.
5. In a Model 1091 5 coin multiplier (a squat machine with no upper unit) there is a coin step-up unit behind the hopper at the top of that compartment. One contact arm steps up after the 2nd coin goes in. At the end of this arm is a disc the size of a 50 cents coin. This disc rotates as it steps up with each coin. It rotates on top of a sharp contact. The sharp contact had eaten right through the disc! Bend the contact away from the hole it had created.

PROBLEM

SECOND COIN IS ACCEPTED BUT TOP UNIT WOULDN'T GO TO 3. THIRD COIN SOMETIMES WOULD REGISTER AS THE SECOND.

SOLUTION

DECREASE TENSION ON SPRING ON STEP UP UNIT. MOVE ONE OF THE HOOKS TO THE NEXT PLASTIC HOLE.

PROBLEM

COINS NOT ACCEPTED AFTER THE FIRST ONE.

SOLUTION

1. STEP UP SOLENOID IN THE TOP UNIT WASN'T SOLDERED WELL ENOUGH TO THE WIRES.
2. BAD COIN SWITCH.
3. BAD SOLDERS TO COIN SWITCH.
4. CLEAN THE CONTACTS ON THE STEP-UP UNIT IN THE UPPER UNIT. THERE IS A STACK OF SWITCHES. THE BOTTOM TWO CONTACTS ARE TOO CLOSE TOGETHER OR TOO DIRTY.

PROBLEM

ONLY THE FIRST COIN IS ACCEPTED AND PAYS OFF, BUT ADDITIONAL COINS DO NOT STEP UP THE ODDS. THIS ONLY APPLIES TO A 5-COIN MULTIPLIER.

SOLUTION

BEHIND THE HANDLE SWITCH (INSIDE CABINET JUST ABOVE THE HANDLE) THERE IS A LITTLE BLACK SNAP SWITCH WHICH SENDS VOLTAGE TO THE STEP UP ODDS UNIT IN THE UPPER UNIT. THE SNAP SWITCH IS NOT SNAPPING BECAUSE THE ARMATURE WHICH TRIGGERS IT IS NOT TOUCHING THE SNAP SWITCH WHEN IT SHOULD. THE ARMATURE IS MOVED BY A SOLENOID. THE SPACE BETWEEN THE ARMATURE AND THE SOLENOID IS TOO BIG FOR THE SOLENOID TO PULL DOWN THE ARMATURE. PUT A COUPLE WASHERS UNDER THE SOLENOID TO MAKE IT EASIER FOR THE SOLENOID TO PULL DOWN THE ARMATURE. ALSO, TIGHTEN THE SPRING ON THE ARMATURE.

PROBLEM

ONLY THE FIRST COIN IS ACCEPTED AND PAYS OFF, BUT ADDITIONAL COINS DO NOT STEP UP THE OTHER FOUR LINES ON A 5 LINER (MODEL 873).

SOLUTION

IN THE UPPER UNIT THERE ARE TWO FEMALE BEAU PLUGS. LOOK AT THE ONE ON THE LEFT. THE VERY UPPER MIDDLE RECEPTACLE IS LOOSE OR NOT MAKING CONTACT WITH THE MALE CONTACT ON THE UPPER UNIT. OFTEN, THE MALE PLUG WILL PUSH THE FEMALE CONTACT (S) RIGHT IN TOWARD THE BACK OF THE CABINET. PUSH THE FEMALE CONTACT BACK INTO POSITION AND EPOXY IT. IF IT DOESN'T FIT, OR THE BEAU PLUG IS CRACKED, REPLACE THE BEAU PLUG.

IN ANOTHER CASE, THE STEP-UP UNIT IN THE UPPER UNIT WAS STUCK. THERE ARE A COUPLE LEVERS THAT FUNCTION TO ROTATE THE PLASTIC WHEEL AROUND. ONE OF THESE LEVERS WAS STUCK IN A HOLE IN THE METAL CASING. A FOOT AT THE BOTTOM OF THE LEVER WENT BACK AND FORTH BUT HAD FALLEN INTO A HOLE IN THE METAL. THE FOOT WAS LIFTED BACK UP AND IT STARTED WORKING. THE FOOT WAS BENT SO IT WOULD NOT FALL INTO THE HOLE. NOW, THE LEVER WORKED AND THE WHEEL ROTATED EACH TIME A COIN WAS PUT INTO THE MACHINE.

PROBLEM

COINS DON'T TRIP THE HANDLE LATCH OR ACTIVATE THE STEP-UP IN THE UPPER UNIT.

SOLUTION

1. FIND A BROKEN OR UNATTACHED WIRE COMING FROM THE COIN RELAY SOLENOID WHICH IS ON THE LOWER LEFT SIDE CORNER OF THE REEL MECHANISM. SOMETIMES THE ULTRA THIN WIRE COMING FROM THE SOLENOID BREAKS AWAY FROM THE SOLDER AT ONE TERMINAL OF THE SOLENOID. BEFORE SOLDERING THE THIN WIRE, STRIP THE VARNISH OFF THE WIRE AND TIN IT SO THE SOLDER WILL STICK TO IT AND MAKE A GOOD CONNECTION.
2. THE "DASHPOT" SWITCH ISN'T WORKING. ON THE RIGHT SIDE OF THE REEL MECHANISM IS A LONG WHITE PLASTIC TUBE. A SHAFT GOES INTO THE TUBE AND EVENTUALLY STARTS TO STICK IN THE TUBE. THIS PREVENTS THE SWITCH BEHIND THE TUBE FROM ACTIVATING. THE STICKINESS ALSO PREVENTS THE HANDLE FROM GOING ALL THE WAY BACK. A TEMPORARY FIX IS TO SPRAY A LUBRICANT INTO THE TUBE. A BETTER WAY IS TO REMOVE THE SHAFT FROM THE TUBE AND CLEAN ALL THE BLACK "GUK" OFF. A NEW PIECE OF RUBBER IS NOT NEEDED TO REPLACE THE BLACK GUK (RUBBER).
3. ON THE BACK LEFT CORNER OF THE HOPPER IS THE PAYOUT RELAY SWITCH. SEE IF THE WHITE/ORANGE WIRE ATTACHED TO IT IS BROKEN OR LOOSE.
4. IF THE HANDLE LATCH DOESN'T TRIP (WORK) OR IF THE HANDLE LATCH IS LAZY (WORKS BUT ONLY AFTER A DELAY) TRY LUBRICATING THE SPOT WHERE THE HANDLE LATCH AND THE ARMATURE THAT IS ACTIVATED BY THE SOLENOID MEET. IF IT IS DRY, THE TWO PIECES OF METAL JUST WILL NOT SLIDE OFF ONE ANOTHER - THEY HANG UP AND PREVENT THE HANDLE LATCH FROM TRIPPING. THE LUBRICATING POINT IS AT THE VERY BACK OF THE HANDLE LATCH.
5. ON THE BACK OF THE HOPPER THERE IS A BEAU PLUG. THIS PLUG HAD BEEN BANGED AGAINST THE FEMALE PLUG IN THE BACK OF THE MACHINE SO MUCH IT WAS NOT MAKING CONTACT WITH THE FEMALE PLUG. THE HOPPER PLUG WAS PUSHED BACK INTO THE HOPPER TOO FAR. RE-POSITION THE HOPPER PLUG.
6. THERE IS A SOLENOID WHICH PULLS UP AN ARMATURE TO TRIP THE HANDLE LATCH. THIS ARMATURE IS OBLONG WITH TWO TIPS STICKING OUT AT ONE END. FILE THE AREA BETWEEN THE TWO TIPS. THE ARMATURE WILL NOW SWING MORE EASILY. THE EDGE AT ONE END OF THE ARMATURE WAS RUBBING AND MAKING IT DIFFICULT FOR THE SOLENOID TO DO ITS WORK.

PROBLEM

FIRST COIN STEPS UP TWICE INSTEAD OF ONCE (IT DOES THE WORK OF TWO COINS).

SOLUTION

1. THE HANDLE SWITCH IS CLOSED AND NEEDS ADJUSTMENT. IT IS THE BOTTOM SET OF SWITCHES JUST ABOVE THE HANDLE LATCH.
2. THERE IS A SHORTED WIRE IN THE BEAU PLUG AT THE BACK OF THE REEL MECHANISM. IN THIS PARTICULAR CASE, MODEL 1090 HAD A BARE WIRE CRUSHED AGAINST THE BRACKET THAT THE FEMALE BEAU PLUG WAS ATTACHED TO. THE WIRE CAME OUT OF THE BOTTOM ROW OF THE BEAU PLUG AND TOUCHED THE METAL OF THE HOUSING OR BRACKET OF THE CABINET. THUS, THE WIRE WAS SHORTED TO THE CABINET.
3. IN THE UPPER UNIT THERE IS A STEP-UP UNIT THAT ROTATES ONE NOTCH FOR EACH COIN INSERTED. THERE ARE 2 SPRINGS ABOUT 2 1/2" LONG NEAR THE TOP OF THE STEP-UP UNIT. REDUCE THE TENSION ON THE TOP SPRING.
4. THERE IS A SHORT IN THE 50 VOLT LINE. IN THIS CASE, IN A MODEL 831, THE "CALL ATTENDANT" SWITCH HAD BROKEN INSIDE THE FRONT DOOR. THE TWO WIRES HAD COME OUT AND ONE WAS TOUCHING THE DOOR. THIS CAUSED A SHORT AND THE FIRST COIN REGISTERED LIKE TWO COINS. ALSO, BEFORE A PAYOUT THERE WAS A LOUD CHATTER IN THE HOPPER. TAPE THE TWO WIRES.
5. IN AN
BOTTOM OF THE STEP-UP IS A SET OF SWITCHES. THERE IS AN ORANGE WIRE GOING TO THE TOP SWITCH. THE WIRE IS LOOSE OR NOT ATTACHED. SOLDER THE CONNECTION.
6. IN THE UPPER UNIT OF A 5 COIN WIDEBODY MULTIPLIER BOTH THE RESET SOLENOID AND THE STEP-UP SOLENOID ENERGIZED ON THE FIRST COIN. ONLY THE RESET SOLENOID SHOULD ENERGIZE ON THE FIRST COIN IN. AFTER FOURTEEN HOURS, A SOLUTION WAS FOUND TO STOP THE MACHINE FROM STEPPING UP BEFORE THE SECOND COIN WENT IN. TILTING THE WOOD UPPER UNIT BOARD OUT YOU CAN SEE 3 BANKS OF SWITCHES. THE FIRST BANK DOES THE STEPPING UP. ON THE 3RD SET OF SWITCHES ON THE 1ST BANK SPREAD THE OUTER TWO SWITCHES FARTHER APART. ALSO, BEND THE COIN SWITCH DOWNWARD SO THAT WHEN A COIN HITS THE COIN SWITCH IT GIVES IT A SHORTER STROKE. THESE 2 ACTIONS MADE IT SO THE MACHINE WOULD WAIT UNTIL THE SECOND COIN WAS PUT IN BEFORE IT REGISTERED THE SECOND COIN.

PROBLEM

LOUD BUZZING AT BOTTOM OF COIN REJECTOR.

SOLUTION

1. WEDGE A SLIVER OF WOOD BEHIND THE PLASTIC BRACKET THAT HOLDS THE SOLENOID. THE SLIVER OF WOOD IS SHOVED DOWN FROM ABOVE AND GOES BETWEEN THE PLASTIC BRACKET AND THE METAL BRACKET THAT HOLDS THE COIN REJECTOR. INSERT WOOD 1/2" TO RIGHT OF SOLENOID.

2. GIVE THE SOLENOID A SLIGHT TURN WITH A SCREWDRIVER.
3. CHANGE THE TENSION ON THE SPRING HOLDING THE PIECE OF METAL DOING THE BUZZING.
4. PUT A PIECE OF TAPE AROUND THE METAL DOING THE BUZZING.
5. CHANGE ARMATURE.
6. TAKE OUT THE CASING THAT HOLDS THE COIN REJECTOR.

TAKE OUT THE SCREW THAT GOES FROM THE BACK OF THE CASING INTO THE SOLENOID. PULL THE "CORE" OUT OF THE SOLENOID, CLEAN IT AND PUT IT BACK IN AFTER HAVING TURNED IT 180 DEGREES. THIS DOES MORE THAN THE SLIGHT TURN WITH THE SCREWDRIVER IN "2" ABOVE.

7. GRIND SMOOTH THE INDENTATION THE SOLENOID MAKES ON THE ARMATURE.
8. REMOVE THE ARMATURE. EXTRA COINS PLAYED JUST STAY IN THE MACHINE.

PROBLEM

COINS DON'T STEP UP CONSISTENTLY. FOR EXAMPLE, ON A 5-LINE MACHINE, 3 LINES STEP UP AND THE 4TH SOMETIMES DOESN'T STEP UP.

SOLUTION

WEAKEN THE SPRING (ABOUT 2 INCHES LONG) THAT WILL MAKE IT EASIER FOR THE SOLENOID TO STEP UP FOR EACH COIN. THIS OCCURS IN THE UPPER UNIT IN THE STEP UP CIRCULAR UNIT. EACH COIN ROTATES ONE STEP. A LEVER REACHES FOR ONE PLASTIC TOOTH EACH TIME. IF THE SPRING TENSION IS TOO GREAT THE LEVER DOESN'T REACH QUITE FAR ENOUGH. THE SOLENOID ISN'T QUITE STRONG ENOUGH TO COUNTERACT THE SPRING TENSION.

MORE LIKELY, THE COIN IS MISSING THE COIN SWITCH (THE HAIR SWITCH ON THE INSIDE MIDDLE OF THE DOOR). FOR EACH SIZE COIN THERE IS A DIFFERENT SIZE SPACER TO MAKE THE COIN SWITCH MOVE DOWNWARD.

ALSO, LOOK AT THE STEP-UP UNIT IN THE UPPER UNIT AND SEE A STACK OF SWITCHES. THE BOTTOM SET OF SWITCHES IS TOO CLOSE TOGETHER OR DIRTY AND THEY ARE KEEPING THE SOLENOID FROM DOING ITS JOB. SPREAD AND CLEAN THE SWITCH. VISUALLY CHECK THAT THE SWITCH IS OPENING AND CLOSING.

PROBLEM

MACHINE PLAYS WITHOUT A COIN! LOOK FOR THESE IN A CASINO! EACH TIME THE REELS STOPPED THE MACHINE WAS READY TO PLAY AGAIN BEFORE THE FIRST COIN WAS PUT IN. MORE COINS COULD BE PUT IN AND WOULD REGISTER, BUT THE FIRST COIN WAS NOT NEEDED!

SOLUTION

AFTER 12 HOURS IT WAS DISCOVERED THAT A NEW COIN SWITCH HAD BEEN INSTALLED. IT LOOKED LIKE A REGULAR COIN SWITCH AND IT WAS BRAND NEW. BUT, THE TERMINALS WERE NOT IN THE SAME POSITION. THE WIRES WERE ATTACHED LIKE THEY WERE ON THE OLD SWITCH - BUT THE WIRES NOW WENT TO THE WRONG TERMINALS. WHEN THE WIRES WERE ATTACHED CORRECTLY, BY CHECKING THE OLD SWITCH AND THE NEW SWITCH THE MACHINE WORKED PERFECTLY AGAIN.

NO PAYS

PROBLEM

NO PAYS

SOLUTION

CHECK THE RM "A" (REEL MECHANISM) SWITCH AND THE RM "C" SWITCH FOR GAPS OR STICKING TOGETHER OR SHORTED WIRES HOLDING THESE SWITCHES CLOSED. THESE ARE ON THE LEFT SIDE OF THE REEL MECHANISM AS YOU FACE THE MACHINE.

ON THE HOPPER CONTACT BOARD, THE SWITCH BLADE OR PLASTIC ROCKER ARM IS STICKING TO THE RUBBER BARREL - SHAPED ZERO STOP. THIS PREVENTS A RESET SO THAT THE NEXT PAY MAY TAKE PLACE. REPLACE RUBBER WITH THE ERASER END OF A PENCIL OR MAKE A SPRING TO PULL THE ROCKER ARM AWAY FROM THE RUBBER BARREL. THE BOLTS HOLDING THE HOPPER MOTOR AT THE VERY BOTTOM OF THE NEW STYLE (SNOW) HOPPER MAY BE LOOSE CAUSING THE HOPPER TO BIND AND NOT PAY OUT. SOMETIMES THERE IS A BUTTON SEEN WITH THE FRONT DOOR OPEN. THIS BUTTON MUST BE PRESSED FOR PAYS. OTHERWISE, THE DOOR MUST BE CLOSED FOR PAYS TO OCCUR.

SEE IF THERE IS A BROKEN WIRE AT THE BACK OF THE HOPPER. THE WIRE COMING FROM THE SOLENOID OF THE PAYOUT RELAY TO THE RESISTER MAY BE BROKEN. IT'S ON THE BACK LEFT CORNER OF THE HOPPER AS YOU FACE THE MACHINE.

SEE IF THERE IS A BROKEN WIRE ON THE BEAU PLUG THAT THE HOPPER PLUGS INTO. CHECK THE DOUBLE ORANGE WIRE ON THE #12 PIN. UNDER THE HANDLE LATCH THERE ARE SEVERAL SWITCHES. THE BOTTOM SET NEEDS TO BE CLEANED AND/OR ADJUSTED SO THEY PRESS TOGETHER HARDER TO MAKE A GOOD CONTACT. SOMETIMES, JUST PRESSING ON THE TOP OF THESE CONTACTS WILL MAKE THE MACHINE START PAYING.

IF THE "WINNER PAID" LIGHT STAYS ON CONTINUOUSLY, THE PROBLEM IS USUALLY IN THE PAYOUT CIRCUIT. CLEAN AND/OR ADJUST THE "A" AND "C" SWITCHES ON THE REEL MECHANISM (AS ABOVE), PLUS THE SWITCHES AT THE BACK OF THE HOPPER, AND THE HANDLE LATCH SWITCHES (AS ABOVE).

NO PAYS (CONTINUED)

IN A RARE CASE A 3 COIN MULTIPLIER HAD AN ELECTRONIC PAYOUT COUNTER. IT WAS MOUNTED IN A METAL CASE ABOUT 8 INCHES TO THE RIGHT OF THE HOPPER. FOR 3 YEARS THE OWNER ASSUMED IT WAS A REGULAR COUNTER IN A CASE. HE DROVE IT TO A NEW OWNER, PLUGGED IT IN AND THE MACHINE WOULD NOT PAY AT ALL. A MECHANIC TOOK OUT THE 9 VOLT BATTERY ON THE ELECTRONIC BOARD. THEN HE LAID THE TIP OF A SCREWDRIVER ACROSS EACH CAPACITOR'S FEET, THEN ACROSS THE 2 POINTS WHERE THE BATTERY WOULD TOUCH. HE PUT THE BATTERY BACK. THE MACHINE WORKS FINE. NOBODY KNOWS WHY - BUT IT WORKED.

SEE IF A FUSE IS BLOWN (BEHIND THE HOPPER). IT IS USUALLY THE MIDDLE FUSE, A 5 AMP FUSE. THIS IS A CAUSE THAT OCCURS FREQUENTLY.

PROBLEM

ON A MULTI-COIN MACHINE ALL COINS ACCEPTED AND ALL LIGHTS GO ON - EXCEPT AS SOON AS THE HANDLE IS PULLED ALL LIGHTS ABOVE ONE GO OUT AS THOUGH ONLY ONE COIN WERE INSERTED. NO PAYS AND THERE IS NO RESET OF THE HOPPPER.

SOLUTION

FIX OR REPLACE COIN SWITCH ON INSIDE MIDDLE OF DOOR. THERE IS A SHORT EITHER IN THE CONNECTIONS TO THE SWITCH OR INSIDE THE SWITCH. IF INTERNAL - REPLACE SWITCH.

PROBLEM

NO PAY ON CERTAIN PAYOUTS

SOLUTION

LOOK AT THE BAKELITE BOARD (THE PAYBOARD) ON THE SIDE OF THE HOPPER. THERE IS A WIRE ATTACHED TO MOST OF THE NUMBERS. MOST OF THE NUMBERS ARE ACROSS THE BOTTOM. IF THERE IS NO PAY FOR THREE ORANGES, CHECK AND SEE IF THE WIRE GOING TO "10" IS BROKEN, LOOSE, OR NOT ATTACHED.
IN ONE CASE, A SUPER CONTINENTAL, ANY WINNER OF 20 COINS DID NOT PAY. THERE WERE ABOUT 5 DIFFERENT WINNERS THAT WOULD PAY 20 COINS. NONE PAID. AFTER 8 HOURS OF SEARCHING THE PROBLEM WAS SOLVED. THE APROACH MAY HELP YOU IN FIXING OTHER PROBLEMS. ALL THE USUAL IDEAS WERE TRIED BUT NOTHING COULD BE FOUND ABOUT <u>WHERE</u> THE PROBLEM MIGHT BE. FINALLY, WE GOT ANOTHER CONTINENTAL AND STARTED SWITCHING REEL MECHANISMS AND HOPPERS. THE NEW HOPPER DID PAY 20 COINS, SO THE PROBLEM WAS IN THE HOPPER. WE WENT TO THE SILVER CONTACT ON THE PAYBOARD MARKED "20". NEXT WE FOLLOWED THE WIRE THAT ATTACHED TO THE "20" CONTACT. WE LOOKED AT EVERY PLACE THE "20" WIRE ATTACHED. ALL LOOKED NORMAL. NEXT STEP WAS TO SEE IF ELECTRICITY WAS GETTING THROUGH THE "20" WIRE. A MULTIMETER ($20 AT RADIO SHACK) WAS USED TO CHECK THE CONTINUITY. ONE POINT OF THE MULTIMETER WAS TOUCHED TO

THE BEAU PLUG PIN TO WHICH WAS ATTACHED THE "20" WIRE. THE OTHER POINT WAS TOUCHED TO THE "20" WIRE JUST BEFORE IT TOUCHED THE "20" CONTACT ON THE PAYBOARD. THE "BEEP" SOUNDED PROVING THE WIRE WAS O.K. BETWEEN THOSE 2 POINTS. THEN WE CHECKED THE WIRE WHERE IT ATTACHED TO THE "10" CONTACT AND THE "20" CONTACT ITSELF. NO BEEP! WE FOUND IT! THE SOLDER CONNECTION WAS BAD. IT LOOKED OK, BUT THE WIRE WAS NOT MAKING A GOOD CONTACT WITH THE CONTACT. WE MELTED THE SOLDER INTO THE JOINT. NOW CONTINUITY EXISTED. NOW THERE WAS PAYMENT OF 20 COINS. THIS COULD HAPPEN ON ANY CONTACT. THIS WAS UNUSUAL. NON PAYS ARE MORE COMMONLY CAUSED BY OTHER REASONS LISTED IN THIS GUIDE.

PROBLEM

ON A MEDALLIST THE THREE REELS TO THE RIGHT DON'T PAY OFF.

SOLUTION

ON THE REEL MECH THERE ARE TWO PLUGS. CHECK THE PLUG ON THE RIGHT (AS YOU FACE THE FRONT OF THE MACHINE), AND LOOK FOR LOOSENESS OR A BAD CONTACT ON THE 6TH PIN FROM THE RIGHT (FACING THE MACHINE) BOTTOM ROW. IF THIS PIN IS PUSHED BACK AND NOT MAKING CONTACT THE PAYOUTS WON'T WORK ON THE THREE RIGHT HAND REELS.
FIX THE PIN.

PROBLEM

ONLY CHERRIES PAY OFF ON THE 3RD LINE (LOWER ROW). IF THE MACHINE IS A 5 LINE MACHINE, ONLY THE CHERRIES WILL PAY OFF ON ROWS 3,4, AND 5.

SOLUTION

THE PROBLEM IS WITH THE 3RD REEL (MOST MACHINES HAVE NO CHERRIES ON THE 3RD REEL). CHECK THE BACK RIGHT CORNER OF THE REEL MECHANISM. THERE ARE 3 STACKS OF SWITCHES ONE ON TOP OF THE OTHER.
THE BOTTOM ONE IS THE BOTTOM ROW RELAY. TWO GRAY-RED WIRES ENTER THREE SETS OF CONTACTS ON THIS RELAY. THE GRAY-RED WIRE IS BROKEN OR SOLDERED BADLY.

PROBLEM

TWO ORANGES AND A BAR, THREE PLUMS, 2 PLUMS AND A BAR, THREE BELLS, DON'T PAY ON THE TOP AND MIDDLE LINES IN A 5 LINE CRISS CROSS (1046 & 873). LATER ON, THE PROBLEM ONLY SHOWED WHEN THERE WAS A BAR ON THE 3RD REEL.

SOLUTION

ON THE REEL MECHANISM, FIND THE LOWEST STACK OF SWITCHES ON THE LOWER RIGHT SIDE AT THE BACK (AS YOU FACE THE FRONT OF THE MACHINE). THE ORANGE WIRE IS BROKEN, PROBABLY WHERE IT ATTACHES TO THE SWITCH.

PROBLEM

TOP ROW DOES NOT PAY (COULD BE ANY ROW)

SOLUTION

ON THE REEL MECHANISM THERE ARE THREE WIPER BLADES WHICH WIPE ACROSS A BUNCH OF LITTLE BRASS BUTTONS (CONTACTS). ON EACH WIPER BLADE THERE IS ONE JUMPER WIRE. THE JUMPER WIRE IS BROKEN OR HAS A BAD CONNECTION. SOLDER THE JUMPER WIRE.

IN THE TOP UNIT THERE IS A STEP-UP UNIT WITH LEGS STICKING OUT THAT ROTATE TO DIFFERENCT CONTACTS EACH TIME A COIN GOES IN. PUT THE COIN IN THAT TRIGGERS THE TOP ROW (LINE), USUALLY THE 2ND COIN. TAKE OUT THE TOP UNIT AND CLEAN THE CONTACTS WHERE THOSE LEGS TOUCH THE CONTACT. CHECK FOR BROKEN WIRES ON THE BACK OF THIS BOARD TOO.

PROBLEM

THERE WERE NO PAYS ON A SUPER CONTINENTAL. THAT IS, NO CREDITS WOULD ACCUMULATE WHEN A WINNER WOULD HIT.

SOLUTION

1. BEHIND THE REEL MECHANISM THERE ARE 2 BEAU PLUGS ON THE CABINET. THERE WERE 2 LOOSE OR BROKEN WIRES. RESOLDERING DID THE TRICK.
2. ANOTHER TIME IT WAS A SET OF CONTACTS THAT NEEDED ADJUSTMENT IN THE HOPPER. LOOKING INTO THE MACHINE SEE THE SET OF CONTACTS ON THE FLOOR OF THE HOPPER. THERE IS ANOTHER SET OF CONTACTS BEHIND THOSE CONTACTS. THESE ONES NEED TO BE CLEANED AND ADJUSTED.

PROBLEM

A FEW COINS CAME OUT AND THEN THEY JUST STOPPED.

SOLUTION

IN THIS CASE THE COINS WERE JAMMED IN THE HOPPER. IN THE HOPPER THERE IS A RUBBER AGITATOR (USUALLY) THAT STIRS UP THE COINS SO THEY WILL COME OUT PROPERLY. ONE OF THE FINGERS OF THE AGITATOR BECAME LOOSE SO THAT A COIN GOT UNDER AND LIFTED OTHER COINS UP THE COIN TRACK. TWO COINS AT ONCE WENT UNDER THE ROLLER AND ENTERED THE EXIT CHANNEL TOGETHER AND CLOGGED THE CHANNEL. THIS HAPPENED ONLY IN A <u>DOLLAR</u> MACHINE AND WOULD NOT LIKELY HAPPEN IN OTHER MACHINES.

PROBLEM

ON A MULTIPLE LINE MACHINE (I.E. 873) ONE CHERRY ON THE TOP LINE PAYS 'O' YET ONE CHERRY ON THE CENTER OR BOTTOM LINE PAYS CORRECTLY.

SOLUTION

ON AN 873 (5 LINES) THERE ARE THREE TWO PAY-CONTACTS ON THE CONTACT BOARD ON THE HOPPER. THE FINGER THIRD FROM THE BOTTOM NEEDS TO BE BENT DOWN SO IT WILL REACH THE CONTACT STRIP ON THE CONTACT BOARD.

PROBLEM

THREE PLUMS DON'T PAY BUT ALL ELSE DO.

SOLUTION

1. CHECK THE FEMALE BEAU PLUG THAT THE HOPPER PLUGS INTO. THE HOPPER HAS ON ITS PLUG TWO LONG PRONGS THAT GUIDE THE ENTRY OF THE HOPPER. THE TOP PRONG SOMETIMES PUSHES THE CORRESPONDING FEMALE RECEPTACLE BACK THROUGH THE BEAU PLUG. THUS, THE PRONG DOESN'T CONNECT WITH THE RECEPTACLE AND MAKE CONTACT. MERELY PUSH THE RECEPTACLE BACK INTO POSITON ON THE FEMALE BEAU PLUG. NOW THE PRONG CAN ENTER AND MAKE CONTACT.

2. FOLLOW THE "14 PAY" WIRE TO THE SET OF CONTACTS IN THE MIDDLE OF THE HOPPER BEHIND THE PAYBOARD. CLEAN AND/OR ADJUST THOSE CONTACTS. SEE IF THE ARMATURE IS IN PLACE ON TOP OF THE SOLENOID.
3. CHECK AND SEE IF THE "14 PAY" WIRE IS BROKEN OFF THE PAYBOARD.
4. CHECK THE "14 PAY" CONTACT ON THE HOPPER PAYBOARD TO SEE IF THE FINGER IS ACTUALLY TOUCHING THE "14" CONTACT ON THE PAYBOARD. SOMETIMES THE ZERO STOP RUBBER BARREL HAS BECOME SO WORN OR VIBRATED LOOSE SO THAT THE PLASTIC DISC IS RETURNING (RESETTING) TOO MUCH. IT'S RESETTING SO FAR BACK THAT THE FINGER JUST CAN'T REACH THE CONTACT. ON SOME MACHINES THE 14 CONTACT IS WIRED ONTO THE "14" CONTACT AT THE TOP OF THE PAYBOARD. THIS MIGHT BE THE ONLY FUNCTION OF THE TOP RACK ON THE FINGERS ON THE PLASTIC DISC AND THIS EXPLAINS WHY PLUMS DON'T PAY BUT ALL OTHER SYMBOLS DO PAY.
5. CHECK FOR A BROKEN OR LOOSE WIRE ATTACHED TO THE SOLENOID AND SWITCH THAT IS IN THE HOPPER ABOUT IN THE MIDDLE OF THE HOPPER ON THE FLOOR OF THE HOPPER.

OVERPAYS & UNDERPAYS

PROBLEM

OCCASIONAL OVERPAYS OF ABOUT TWO COINS.

SOLUTION

1. IN AN ELECTRICALLY STEPPED HOPPER, A COIN COMES TO THE TOP OF THE HOPPER AND LIFTS A ROLLER WHICH HAS THE EFFECT OF PRESSING DOWN ON A SET OF HORIZONTAL CONTACTS. IF THOSE CONTACTS DON'T MAKE PROPERLY, THE COIN DOESN'T GET COUNTED. CLEAN, BUT MORE IMPORTANTLY, TIGHTEN THOSE CONTACTS SO A GOOD CONTACT IS MADE EVERY TIME.
2. IF THE B26 1100 SOLENOID ON THE BACK OF THE CIRCUIT BOARD IN THE HOPPER IS BAD, IT WILL BUZZ OCCASIONALLY AND NOT ADVANCE THE PLASTIC COUNTER, BUT A COIN STILL COMES OUT. CHANGE THE SOLENOID. SOMETIMES THE SOLENOID NEEDS CLEANING.
3. SEE IF THE RUBBER BUMPER ZERO STOP ON THE HOPPER IS BROKEN.

PROBLEM

OCCASIONAL OVERPAYS OF ONE COIN. THE EXTRA COIN JUST SEEMS TO DRIBBLE OUT AFTER A PAY.

SOLUTION

THIS HAPPENS TO THE "LATE STYLE" OR "SNOW" HOPPER IDENTIFIED BY THE MOTOR IN THE BOTTOM OF THE HOPPER RATHER THAN THE END. THE BRAKE THAT STOPS THE MOTOR IS NOT WORKING PROPERLY. IT IS AT THE VERY BOTTOM OF THE HOPPER. THERE ARE 3 SOLUTIONS.

1. IF THE BRAKE IS STICKING - LUBRICATE.
2. WRAP ELECTRICAL TAPE AROUND THE METAL BAR (ABOUT 3"X 1/3"). THIS ELIMINATES RESIDUAL MAGNETISM.
3. SEE IF THE PLASTIC "CLAW" IS WORN OR BROKEN THAT STOPS THE MOTOR.

PROBLEM

ON A 5 COIN MULTIPLIER BARS ONLY MACHINE, 3 BARS SHOULD PAY 100 BUT PAY 110. THE '10' STRIP IS ALSO HOT WHICH IS NATURAL BECAUSE 3 BARS STILL ARE 3 BARS.

SOLUTION

ON THE HOPPER, TO THE LEFT OF THE ZERO SWITCH IS A VERTICAL SWITCH WHICH IS TRIPPED WHEN THE PAY DISC MAKES ONE REVOLUTION STOPPING THE PAY SO THAT THE "10 PAY" DOESN'T PAY. ON THE FIRST REVOLUTION BOTH CONTACTS (THE 10 & 100) ARE HOT. THE VERTICAL CONTACTS ARE EITHER DIRTY OR BENT - ADJUST AND CLEAN THE CONTACTS.

PROBLEM

ON A 5 COIN MULTIPLIER (809-N) THE "ANY BAR" PAYOFF WAS 7 INSTEAD OF 20.

SOLUTION

THERE WERE 2 SETS OF CONTACTS THAT CONTROLLED THE 20 PAY! IN ADDITION TO THE REGULAR 20 PAY CONTACT ARM THAT RAN ALONG THE 20 PAY STRIP THERE WAS A SWITCH ATTACHED TO THE LOWER LEFT CORNER OF THE PAY BOARD. IT IS NORMALLY CLOSED AND RESTING AGAINST A PLASTIC POST. AS THE METAL RACK MOVES ACROSS THE PAYBOARD, THE SWITCH OPENS WHEN 20 COINS ARE PAID. THE SWITCH WAS OPEN. WHEN THE SWITCH ARM WAS BENT TO CLOSE THE CONTACTS THE PROBLEM WAS SOLVED.

PROBLEM

HOPPER "CHATTERS" CAUSING IRREGULAR PAYOUTS. THE KNOCK OFF LEVER THAT STOPS COINS FROM BEING PAID OUT SPORADICALLY TRIPS WHEN IT SHOULDN'T TRIP MAKING A CHATTERING NOISE.

SOLUTION

1. LOOK FOR TINY SPARKS WHERE A CONTACT ARM TOUCHES THE PAYOUT COUNTER CONTACT BOARD. TIGHTEN THIS CONTACT ARM SO THAT IT PRESSES THE CONTACT HARDER ONTO ITS CONTACT STRIP.
2. CLEAN AND TIGHTEN THE TOP HORIZONTAL CONTACTS JUST BEHIND THE HOPPER CONTACT BOARD. IF THESE CONTACTS DON'T MAKE PROPERLY THEY WILL NOT COUNT A COIN THAT WAS JUST PAID.

PROBLEM

ERRATIC OVERPAYS

SOLUTION

WHEN COINS CLIMB THE WALL OF THE HOPPER THEY ARE PUSHED ALONG BY LITTLE POSTS. WHEN A COIN GETS OUTSIDE A POST AND REACHES THE ROLLER IT STICKS AND OTHER COINS SNEAK BY IN BEHIND THE FIRST COIN. BEND THE ROOF OF THE HOPPER DOWN CLOSER TO THE PINWHEEL SO THE COINS DON'T GET UNDER THE ROOF UNLESS THEY ARE LINED UP FLAT AGAINST THE WALL. THE ROOF IS THE ALUMINUM HOUSING JUST ABOVE AND TO THE RIGHT OF THE COIN KICK OFF LEVER.

PROBLEM

ERRATIC OVER AND UNDER PAYOFFS (I.E. A RANGE OF TWO THROUGH SIX WHEN IT SHOULD HAVE BEEN FIVE). COINS JAM UNDER THE KNIFE. COINS "PING" OFF THE PINWHEEL TRACK. THIS CAUSES WEAR ON THE SOLENOID PLUNGER THAT PULLS BACK THE COIN KICKER. THE HOLE AT THE END OF THE PLUNGER BECOMES OVAL AND CREATES "SLOP" WHICH ALLOWS THE COIN KICKER TO PROJECT TOO FAR INTO THE HOPPER BOWL.

SOLUTION

1. BEND THE BRACKET THAT HOLDS THE SOLENOID. THIS HAS THE EFFECT OF PULLING THE COIN KICKER BACK FARTHER SO IT'S EVEN OR BEHIND THE PINWHEEL.
2. CHANGE THE SOLENOID PLUNGER (OR EVEN THE ATTACHED LINK IF THE LINK IS WORN TO THE EXTENT IT CAUSES "SLOP").
3. CLEAN THE PLUNGER. IF IT'S DIRTY IT WILL STICK SOMETIMES CAUSING ERRATIC PAYOUTS.
4. LOOSEN UP THE ROLLER SO IT ROLLS. IF IT WON'T ROLL IT WILL HOLD THE LAST COIN UNTIL THE NEXT PAY.

PROBLEM

ERRATIC UNDERPAYS. IN ONE CASE WHEN 2 SHOULD BE PAID IT WAS CORRECT. WHEN 4 SHOULD BE PAID, 2 WERE PAID. WHEN 6 - ONLY 3 WERE PAID.

SOLUTION

1. ON THE SIDE OF THE HOPPER THERE IS A DISC (USUALLY PLASTIC, SOMETIMES METAL). WIPER CONTACTS ARE ATTACHED TO THIS DISC. THE DISC TURNS AS THE CONTACTS MARCH ALONG THE SILVER CONTACT STRIPS. THE PLASTIC DISC WAS CRACKED. AS THE DISC TURNED THE PLASTIC TWISTED AT THE CRACK AND THE WIPER CONTACTS LIFTED OFF THE CONTACT STRIPS AND THE PAYOUT JUST STOPPED. REPLACE THE DISC OR GLUE THE OLD ONE.
2. IN ANOTHER CASE COINS WERE SOMETIMES LIFTING THE ROLLER SO THAT THE COINS WERE COUNTED BUT WHEN THEY ENTERED THE EXIT CHANNEL THEY SQUEEZED DOWN THE SIDE OF THE CHANNEL AND BACK INTO THE HOPPER BOWL. BEND THE TIN CHANNEL SO THAT A COIN CAN ONLY PASS THROUGH THE CHANNEL. THIS NARROWS THE CHANNEL.

PROBLEM

ONE CHERRY ON TOP LINE OR BOTTOM LINE PAYS 7 VS. 4.

SOLUTION

THE SPIRAL ON THE HOPPER IS REACHING TOO FAR AND CONTACTS THE 7 PAY CONTACT. ADJUST THE ZERO RUBBER STOP BACK OR ROTATE THE CONTACT BOARD.

PROBLEM

ONE COIN EXTRA IS OCCASIONALLY PAID. ON THE HOPPER, THE COIN KICKER KICKS THE COINS AWAY FROM THE ROLLER ON THE PIVOT ARM SO NOTHING MORE CAN BE PAID OUT ONCE A PAY HAS BEEN COMPLETED. IF THE KICK IS NOT EFFICIENT A COIN GETS LODGED UNDER THE ROLLER ON THE PIVOT ARM AND IS NOT KICKED BACK INTO THE BIN. THAT LODGED COIN GETS PAID AS AN EXTRA ON THE NEXT PAYOUT. THE COIN GETS LODGED UNDER THE PIVOT ROLLER FOR THESE REASONS:

1. THE SPRING ISN'T STRONG ENOUGH ON THE COIN KICKER TO GIVE A HARD ENOUGH KICK.
2. THE CORNER OF THE COIN KNIFE STICKS JUST PAST THE PINWHEEL.

3. THE COIN KICKER RUBS AGAINST THE HOPPER WALL AND REDUCES THE SPEED AND FORCE OF THE KICKS.
4. THE TIN GUIDE (ATTACHED TO THE COIN KICKER WITH 2 RIVETS) IS TOO CLOSE TO THE COIN KICKER.
5. THE ROLLER WON'T ROLL WHEN A COIN TRIES TO LIFT THE ROLLER AND ROLL UNDER IT.

SOLUTIONS

TO NO. 1 - TIGHTEN THE SPRING OR USE A HEAVIER ONE.
TO NO. 2 - GRIND THE CORNER OF THE COIN KNIFE.
TO NO. 3 - BEND THE COIN KICKER UPWARD.
TO NO. 4 - BEND IT UPWARD.
TO NO. 5 - LOOSEN THE ROLLER - CLEAN WITH SOLVENT - TURN METAL AGAINST METAL - THEN USE OIL TO LUBRICATE.

PROBLEM

THE MACHINE PAYS EVERY TIME.

SOLUTION

SOMETHING IS STOPPING THE FIRST REEL WIPER (ON THE BOARD RIGHT BEHIND THE FIRST REEL). OFTEN THERE ARE TWO WHITE PLUGS BEHIND THE REEL MECHANISM. THEY SHOULD BE IN THE TOP LEFT CORNER ATTACHED TO THE INSIDE OF THE CABINET. IF THEY ARE HANGING DOWN, THE WIPER GETS HOOKED BEHIND THE PLUG AND THEN THE WIPER COMES FORWARD AND STOPS - RIGHT ON THE CHERRY PAYOUT, GIVING A PAYOUT EVERY TIME! LOOK FOR THESE IN CASINOS! MAYBE THE WIPER WILL STOP ON A HIGHER PAYOUT. LOOK HARDER FOR THESE IN A CASINO!

PROBLEM

ERRATIC OVERPAYS ONE TIME AND NO PAY THE NEXT TIME.

SOLUTION

THE RUBBER ZERO STOP (THE ONE THAT LOOKS LIKE A PENCIL ERASURE) HAS BECOME SOFT AND MUSHY. AFTER A PAYOUT THE PAY DISC SNAPS BACK AND BANGS AGAINST THE RUBBER. AFTER A SMALL PAYOUT THE NEXT PAYOUT IS ACCURATE BECAUSE THE RUBBER DID NOT GET SQUASHED. BUT, AFTER A LARGE PAYOUT THE PAY DISC WHIPS BACK AND SQUASHES THE RUBBER BACK. THUS, THE PAY DISC STARTS EARLIER AND PAYS AN EXTRA COIN OR TWO. ALSO, THE PAY DISC MIGHT RETURN BACK SO FAR IT ISN'T EVEN TOUCHING THE CONTACT STRIPS. THUS, THERE IS NO PAY. REPLACE THE ZERO STOP A RUBBER ERASURE WILL DO.

PROBLEM

1. WEIRD, SPORADIC, LARGE PAYOUTS WHEN NO PAYOUT INDICATED - EVEN A JACKPOT WILL ACTIVATE!
2. ON A "BARS" MACHINE (3 LINES) A WINNER HITS ON 2 LINES BUT ONLY PAYS FOR ONE LINE.

SOLUTION

THE BEAU-PLUG THE HOPPER PLUGS INTO HAS A LOOSE CONTACT RECEPTACLE THAT HAS BEEN PUSHED BACK INTO THE BACK OF THE PLUG-USUALLY THE TOP ONE OF THE TWO "GUIDE" CONTACTS. THE CONTACT NEEDS TO BE GLUED BACK INTO THE BEAU-PLUG SO IT WON'T GET PUSHED BACK IN AGAIN CAUSING A BAD CONTACT.

PROBLEM

RUNAWAY HOPPER ON ALL PAYS ABOVE CHERRIES.

SOLUTION

1. CONDITION IS CAUSED BY CLEANER USED ON CONTACTS ON PAYOUT BOARD. IT SEEPS INTO THE AXEL OF THE SPIRAL AND CLEANS IT TOO MUCH AND DRIES AXEL AREA. IF NO RESPONSE TIGHTEN THE WOUND SPRING BEHIND THE BOARD ONE MORE TURN.
2. ADJUST COIN ROLLER ON HOPPER SO THAT EACH COIN IS STEPPED UP ON THE PLASTIC STEP UP GEAR.

PROBLEM

RUNAWAY HOPPER ON LARGER PAYOUTS

SOLUTION

1. LOOK AT THE OUTBOARD WIPERS ON THE SPIRAL DISC ON THE SIDE OF THE HOPPER. WHEN ONE OF THESE WIPERS COMES AROUND IT CATCHES ON THE METAL BLOCK THAT HOLDS THE RUBBER ZERO STOP. TIGHTEN THE SCREW IN THE MIDDLE OF THE SPIRAL DISC SO THE WIPER NO LONGER CATCHES OR BEND THE WIPER.
2. THE LOWER PAYOUT COUNTER STEP-UP ARM SWITCH IN THE HOPPER IS STUCK TOGETHER AND NOT WORKING. TO FIND THE SWITCH, TAKE OUT THE HOPPER AND LOOK AT THE LEFT SIDE WHERE THE PAYOUT BOARD IS. LOOK AT THE BOARD. LOOK BEHIND THE TOP LEFT CORNER WHERE THE RESET LEVER IS. THERE ARE TWO SWITCHES SEPARATED BY A PIN. THE LOWER SWITCH IS THE ONE THAT NEEDS ADJUSTMENT.

PROBLEM

RUNAWAY HOPPER ON ANY PAYOUT

SOLUTION

1. REPLACE BAD SOLENOID WHICH IS IN THE HOPPER ON THE BACK OF THE CONTACT BOARD. THE SOLENOID TRIGGERS THE LINKAGE WHICH ADVANCES THE PLASTIC GEAR.
2. REPLACE LINKAGE THAT ROTATES THE WHITE GEAR BEHIND

THE HOPPER PAYOUT BOARD. A TAB THAT PULLS THE TEETH AROUND IS BROKEN OFF.

3. SOLDER THE ORANGE WIRE WITH WHITE TRACER TO ITS CONNECTION.

4. LOOK AT THE CONTACTS ON THE BACK LEFT OF THE HOPPER. IF THEY ARE NOT OPENING AND CLOSING PROPERLY, ADJUST THEM.

5. IF THE RUNAWAY ONLY HAPPENS ON THE 2ND & 3RD COIN ON, SAY, A 3 COIN MULTIPLIER, THERE IS PROBABLY A BREAK IN THE CIRCUIT BOARD IN THE UPPER UNIT. THIS PREVENTS THE COUNTING OF COINS.

6. IN A 5 COIN MULTIPLIER (MODEL 809) ONE OR TWO OF THE LITTLE WHITE REELS IN THE UPPER UNIT WERE NOT ROTATING. THIS PREVENTED MULTIPLE PAYS BY PREVENTING THE HOPPER PAYOUT DISC FROM ROTATING. THE HOPPER JUST KEPT PAYING. OIL THE REELS SO THE LINKAGE GOES IN AND OUT OF THE SOLENOIDS.

PROBLEM

RUNAWAY HOPPER (REALLY RUNAWAY CREDITS) ON THE 2ND, 5TH, AND 6TH COINS WHEN A WINNER WAS HIT ON A SUPER CONTINENTAL.

SOLUTION

IN THE UPPER UNIT THERE IS SOMETHING CALLED A SCORE MOTOR UNIT. IT IS A BUNCH OF ALMOST ROUND PLATES WITH HIGH POINTS ON THEM WHICH LIFT CONTACTS AS THEY GO AROUND. ADJUST AND CLEAN THESE CONTACTS SO THEY OPEN AND CLOSE. THE SAME THING HAPPENED WITH THE 4TH COIN IN BUT IT WAS DISCOVERED THE "4" COINT WIRE GOING TO THE STEP UP UNIT WAS BROKEN OFF.

PROBLEM

ON A 5 LINE MACHINE TWO CHERRIES ON A TOP OR BOTTOM LINE PAYS ONLY 5 COINS INSTEAD OF 7 COINS.

SOLUTION

ON THE HOPPER, ON THE BROWN BAKELITE PAYBOARD THERE ARE SEVERAL CONTACT TERMINALS AT THE BOTTOM OF THE PAYBOARD. EACH CONTACT HAS A NUMBER. LOOK FOR ONES MARKED "7". THERE IS A LOOSE CONNECTION OR A BREAK IN A WIRE GOING FROM THE "7" CONTACT ON THE PAYBOARD TO THE BEAU PLUG AT THE BACK OF THE HOPPER. IT COULD BE AT THE "7" CONTACT, IN THE WIRE ITSELF, OR AT THE BEAU PLUG. ALSO, IT COULD BE IN THE FEMALE BEAU PLUG THAT THE HOPPER PLUGS INTO.

PROBLEM

ONE CHERRY PAYS ONE INSTEAD OF TWO, TWO CHERRIES PAY THREE INSTEAD OF FIVE.

SOLUTION

THIS FIRST SOLUTION APPLIES TO A LATER STYLE HOPPER WHICH

COUNTS COINS ELECTRICALLY AS EACH COIN LIFTS THE ROLLER AS IT COMES OUT OF THE HOPPER. IF THE ROLLER IS PRESSING DOWN TOO HARD ON A COIN IT TENDS TO SNAP UP AND BANG BACK DOWN REAL FAST. THIS CAUSES A SWITCH TO CLOSE AND OPEN AND CLOSE AGAIN BEFORE A SECOND COIN COMES ALONG. THUS, TWO COINS ARE COUNTED BUT ONLY ONE COIN CAME OUT. ADJUST THE ROLLER UPWARD.SO THAT COINS ARE NOT PROPELLED OFF THE TRACK INTO THE HOPPER BOWL. ANOTHER SOLUTION INVOLVES MECHANICALLY STEPPED HOPPERS. EACH PAYOFF IS ONE-HALF WHAT IT SHOULD BE. ON THE INSIDE OF THE HOPPER BOARD IS A WHITE NYLON GEAR (PAYOUT COUNTER) THAT GETS PUSHED AROUND BY A LEVER. SOMETIMES THIS LEVER HAS SUCH A WIDE PUSH THAT IT PUSHES TWO TEETH ON THE GEAR INSTEAD OF ONE. THE LEVER MOVES BETWEEN 2 TABS WHICH RESTRICT ITS MOVEMENT. BEND THE UPPERMOST TAB DOWN SO THE LEVER HAS AN EVEN SHORTER STROKE, YET IT WILL STILL GRAB ONE RATCHET TOOTH AND MOVE IT ONLY ONCE.

PROBLEM

UNDERPAYS OF 10 AND 18 INSTEAD OF 20 AND 20 FOR 3 ORANGES AND BELLS, AND 14 INSTEAD OF 20 FOR 3 PLUMBS FOR 1 COIN ON A MODEL 1090.

SOLUTION

A CUSTOMER TOOK ON THIS ONE AND SOLVED IT IN A MARATHON EFFORT! HE FOUND IT IN THE DEEPEST, DARKEST SPOT IN THE MACHINE. BEHIND THE 3RD REEL IS A WIPER BLADE. STARTING WITH THE 2ND WIPER FINGER FROM THE BOTTOM, SEVERAL OF THE FINGERS WERE NOT TOUCHING THE CONTACTS FIRMLY ENOUGH. THEY LOOKED LIKE THEY WERE MAKING CONTACT BUT THEY WERE NOT. BY BENDING THEM TO MAKE THEM TIGHTER AND CLEANING THE CONTACTS THE MACHINE STARTED PAYING LIKE A CHARM!

PROBLEM

ON A 5 COIN MACHINE, WITH 5 COINS PLAYED, IT PAYS OFF AS THOUGH ONE COIN WERE PLAYED.

SOLUTION

IN THE UPPER UNIT, FIND THE STEP-UP UNIT. ON THE BACK OF THE STEP-UP BOARD THERE IS A LOOSE OR BROKEN WIRE. FIX THE WIRE.

IN SOME MULTIPLIER MACHINES THERE ARE EDGE CONNECTORS IN THE UPPER UNIT (LIKE IN A CONTINENTAL). CLEAN THE CORROSION OFF BOTH MALE AND FEMALE CONNECTORS.

PROBLEM

ON A 5 COIN MACHINE THE 1ST THRU THE 4TH COIN PAY O.K. BUT THE 5TH COIN PLAYED MAKES THE MACHINE PAY AS THOUGH ONLY ONE COIN WERE PLAYED.

SOLUTION

IN THE UPPER UNIT THERE IS A STEP-UP UNIT. THE CONTACTS ARE NOT LINING UP PROPERLY. LOOSEN THE 2 BOLTS AND ROTATE SLIGHTLY THE STEP-UP BOARD SO THE CONTACTS TOUCH PROPERLY.

PROBLEM

THE MACHINE SHOULD PAY 50 BUT ONLY PAYS 20 COINS.

SOLUTION

THIS HAPPENED IN A MODEL 847 CONTINENTAL. IN THE HOPPER THE PLASTIC SPIRAL WOULD ONLY GO UP TO 20 BECAUSE SUFFICIENT VOLTAGE WAS NOT GETTING TO THE 50 PAY CONTACT. IN THE TOP UNIT, THE 3RD SET OF CONTACTS FROM THE TOP LEFT IS THE JACKPOT LOCK-UP RELAY SWITCH. OUT OF THIS SWITCH COMES A RED GREEN WIRE WHICH GOES TO A CONNECTOR PLUG ON THE BACK WALL OF THE UPPER UNIT. THERE ARE TWO PLUGS AND THIS ONE IS ON THE LEFT. ON THIS PLUG THE RED GREEN WIRE ATTACHES TO THE UPPER LEFT CORNER. THIS PLUG WAS DIRTY AND AFTER CLEANING THE PRONG FROM THE RED GREEN WIRE THE VOLTAGE WENT THROUGH AND THE PROBLEM WAS SOLVED.

IN ANOTHER CASE, THE HOPPER WAS PULLED OUT AND LOOKING BEHIND WHERE THE HOPPER WAS, TWO OF THE CONTACTS IN THE FEMALE BEAU PLUG WERE PUSHED IN AND NOT MAKING CONTACT. RATHER THAN PUTTING EPOXY ON THE BACK TO HOLD THE CONTACTS IN, THE ENTIRE FEMALE BEAU PLUG WAS REPLACED. THE TWO CONTACTS WERE THE MIDDLE, 2ND FROMTHE BOTTOM, AND THE ONE TO THE RIGHT OF IT. SOMETIMES IT IS POSSIBLE TO MOVE THE WIRES TO UNUSED PINS. MAKE SURE BOTH THE MALE AND FEMALE PINS ARE DONE THE SAME.

PROBLEM

1 CHERRY (1ST REEL) DOES NOT PAY ON ANY LINE EVEN THOUGH 2 CHERRIES AND ABOVE DO PAY.

SOLUTION

PULL OUT THE REEL MECHANISM ON THE 18 PIN PLUG AT THE BACK. CLEAN THE PINS THAT ARE VERTICAL AND TWIST EACH ONE SLIGHTLY. THIS WILL GIVE THEM A BETTER CONTACT WHEN THEY ENTER THE FEMALE PLUG.

PROBLEM

SHOULD PAY 100 BUT MUCH MORE THAN 100 PAID (MAYBE EVEN 200!)

SOLUTION

IN THE HOPPER, LOOK FOR THE SPIRAL WHICH ROTATES AS EACH COIN IS PAID. LAID OVER THE SPIRAL IS A SHINY METAL RACK. IT ALSO MOVES AS COINS ARE PAID. IT SLOWLY MOVES TOWARD THE BACK OF THE MACHINE. THE FRONT-MOST PART OF THIS RACK GETS BENT TOWARD THE HANDLE OF THE HOPPER. BEND IT BACK SO IT IS STRAIGHT. OTHERWISE, IT STOPS THE SPIRAL AND COINS CONTINUE BEING PAID.

PROBLEM

MODEL 809 PAYS CORRECTLY ON 1ST 2ND 3RD AND 4TH COIN BUT NOT ON THE 5TH COIN. WHEN 5 COINS INSERTED THE COINS WOULD STEP UP 5 TIMES BUT THE PAYOFF WAS LIKE EITHER 1 OR 2 COINS HAD BEEN PLAYED.

SOLUTION

IN THE TOP UNIT THERE IS A STEP UP UNIT ON THE RIGHT SIDE (FACING THE MACHINE). THE PLASTIC GEAR HAS BEEN RATCHETED AROUND SO FAR THAT IT HAS OPENED ONE SET OF CONTACTS AND CLOSED THE OTHER SET (THE OPPOSITE TO WHAT SHOULD BE THE NORMAL SETTINGS), AND THE BUNDLE OF WIRES JOINING TO THE LIGHTS HAS CAUGHT ON ONE OF THE ARMS THAT ROTATE ON THAT STEP UP BOARD.

PROBLEM

AN UNDERPAY OF 2 COINS CONSISTENTLY OCCURS ON A 5 COIN MULTIPLE LINE MACHINE WHEN 3 ORANGES ARE HIT ON ONE LINE AND A CHERRY IS HIT ON ANOTHER LINE. THE PAY IS 12 INSTEAD OF 14.

SOLUTION

THE JUMPER WIRE THAT GOES FROM THE "7" PAYOUT TO THE "14" PAYOUT CONTACT ON THE BACK BOTTOM OF THE HOPPER BOARD IS BROKEN OR NOT SOLDERED.

PROBLEM

INCONSISTENT UNDERPAYS.

SOLUTION

1. LUBRICATE THE PLASTIC OR METAL SPIRAL CAM ON THE HOPPER BOARD.
2. INCREASE THE TENSION 1/4 OR 1/2 TURN ON THE SPRING THAT RESETS THE PLASTIC SPIRAL ON THE HOPPER BOARD. WHEN THE HOPPER RESETS, THERE ISN'T ENOUGH SPRING TENSION TO RETURN THE OUTBOARD WIPER CONTACTS, ON THE HOPPER BOARD ALL THE WAY BACK TO THE ZERO STOP. THUS, THE PAYOUT STARTS LATER THAN IT SHOULD AND STOPS TOO SOON TO GIVE A FULL PAYOUT. ALSO, THE WIPER CONTACTS MAY BE PRESSING TOO HARD ONTO THE CONTACT BOARD. THIS FRICTION CAUSES THE WIPER CONTACTS TO DRAG SLOWLY TO A STOP JUST SHORT OF THE ZERO STOP WHEN THE WIPER CONTACTS ARE RESET.
3. ON THE HOPPER BEHIND THE SPIRAL AND HOPPER BOARD IS THE STEP UP SOLENOID. THE SOLENOID PLUNGER RELEASES AND STOPS AGAINST A METAL TAB STICKING UP FROM THE HOPPER BOARD HOUSING. BEND THIS TAB AWAY FROM THE SOLENOID. THIS GIVES A WIDER THROW TO THE LEVER THAT PULLS THE PLASTIC GEAR AROUND. THIS PREVENTS DOUBLE HITS FOR EACH COIN. ALSO, LUBRICATE THE LEVERS THAT PULL THE PLASTIC GEAR AROUND. LUBRICATE THE AXEL OF THE PLASTIC GEAR SO IT GETS TURNED EASILY.
4. CHECK THE TEETH ON THE PLASTIC GEAR. IF THEY ARE WORN THEY MUST BE SHARPENED OR THE GEAR REPLACED.
5. TWO TEETH ON THE PLASTIC GEAR ARE BEING GRABBED INSTEAD OF ONE TOOTH FOR EACH COIN PAID. THIS MAY BE CAUSED BY THE RELEASE LEVER THAT RELEASES THE PLASTIC GEAR SO IT GOES "ZIP" TO ITS ORIGINAL POSITION. NOT ONLY DOES THE RELEASE LEVER RELEASE THE PLASTIC GEAR, IT ALSO PUSHES THE TEETH ON THE PLASTIC GEAR DOWN INTO PLACE AFTER EACH COIN IS PAID. SOMETIMES IT PUSHES DOWN TOO FAR. NOW 2 TEETH GET COUNTED INSTEAD OF 1. BEND THE RELEASE LEVER TOWARDS THE TOP OF THE HOPPER. MAKE THE BEND RIGHT WHERE THE LEVER TOUCHES THE PLASTIC TOOTH. NOW THE PLASTIC GEAR WILL NOT BE PUSHED DOWN TOO FAR.

PROBLEM

ONE CHERRY PAYS 2, BUT SO DO TWO CHERRIES.

SOLUTION

1. ATTACH A VOLTAGE TESTOR FROM THE ORANGE COMMON WIRE TO THE "5" PAY CONTACT AT THE BOTTOM OF THE BAKELITE CIRCUIT BOARD IN THE HOPPER. IF THERE IS NO VOLTAGE AFTER 2 COINS ARE PAID THERE IS NO VOLTAGE GETTING TO THE "5" CONTACT, SO THE HOPPER STOPS.
2. TRACE THE "5" WIRE BACK THROUGH THE MACHINE CHECKING FOR BREAKS, OPEN CONTACTS, BAD CONNECTIONS, OR A BAD BEAU PLUG PIN.
3. IN THE CASE ABOVE, THE PROBLEM WAS IN THE BEAU PLUG (24 PIN-FEMALE) THAT THE REEL MECHANISM PLUGS INTO. LOOKING INTO THE CABINET WITH THE REEL MECHANISM REMOVED, THE LOWER RIGHT CORNER OF THE BEAU PLUG HAD A FEMALE PIN KNOCKED IN AND BROKEN. SOMETIMES A PUSHED IN PIN CAN BE PUSHED BACK OUT AND GLUED, BUT IN THIS CASE THE BEAU PLUG HAD TO BE REPLACED.

PROBLEM

THREE ORANGES PAY 28 INSTEAD OF 10.

SOLUTION

THIS HAPPENED ON A MODEL 922, A 5 LINER WITH THE PROGRESSIVE JP FEATURE. THERE REALLY IS A 28 PAY INSTANCE. IT OCCURS WHEN BOTH DIAGONALS HAVE PLUMBS - 14 FOR EACH LINE.

IN THIS
THE HOPPER IN THE MACHINE YOU SEE A SOLENOID AND SWITCHES INTHE WINDOW LOCATED AT THE BOTTOM OF THE HOPPER. THE SOLENOID SITS ON THE FLOOR OF THE HOPPER. AT THE TOP OF THE SOLENOID THERE IS A SWITCH WITH 2 WIRES COMING OUT. THESE WIRES WERE BARE AND TOUCHING. THIS CAUSED THE "ORANGES" CONTACT TO JUST KEEP ON MARCHING RIGHT UP TO 28. SEPARATE AND TAPE BOTH WIRES.

REEL PROBLEMS

PROBLEM

ONE REEL DOESN'T SPIN.

SOLUTION

WHEN THE REEL STOP LEVERS ENTER THE REEL DISCS THEY GO BANG. OVER TIME THEY CAUSE FLAT SPOTS ON THE DISC WHICH CATCH ON THE REEL STOP LEVERS SO THEY CAN'T GET BACK OUT OF THEIR SLOTS. FILE THE ROUGH SPOT OFF.

PROBLEM

FIRST REEL DOESN'T SPIN - JUST GOES 'CLUNK'.

SOLUTION

AT THE BOTTOM OF THE REEL MECHANISM THERE ARE 3 LONG THIN ABOUT 8" BARS WITH 4 HOLES IN THE END. EACH HOLE IS USED FOR THE TIMING OF THE SPIN OF EACH REEL. SOMETIMES BY REPLACING THE 1ST BAR IT WILL VARY THE SPIN AND NOT CAUSE ANOTHER LEVER IN THE LINKAGE TO 'FALL OFF' OR MOVE TOO SOON BEFORE THE 1ST REEL HAS HAD TIME TO SPIN. SOMETIMES THE 1ST REEL HAS A BAR WITH ONE HOLE THAT ONE WILL OFTEN WORK BETTER THAN THE 3 HOLE VERSION. SPRING TENSION MAY ALSO HELP. ANOTHER SOLUTION IS TO USE DIFFERENT HOLES IN THE 8" BARS. THE 1ST REEL BAR IS NORMALLY AT THE SECOND HOLE. CHANGE THIS TO THE 3RD HOLE. THE 2ND REEL BAR IS NORMALLY AT THE THIRD HOLE. CHANGE THIS TO THE FOURTH HOLE. LEAVE THE THIRD REEL BAR ALONE IN THE 4TH HOLE. NOW REVISE THIS THIRD REEL BAR. THIS BAR HAS A VARIATOR ON IT THAT IS RATCHETED AROUND BY A LATCH. REMOVE THIS LATCH AND ITS SPRING BY BENDING THE SMALLEST TAB ON THE LATCH AND PUSHING IT OFF COMPLETELY. NEXT TURN THE VARIATOR (THE CIRCULAR BLACK WHEEL) WITH YOUR FINGERS UNTIL THE BAR IS SHORT. NOW THE 3 REELS WILL STOP 1, 2, 3 IN THAT ORDER.

ALSO, A REEL(S), USUALLY THE FIRST ONE, WON'T SPIN BECAUSE THE REEL SHAFT IS JUMPING OUT OF IT'S SLOT ON THE LEFT SIDE OF THE REEL MECHANISM. THE REEL SHAFT SITS IN A LITTLE CRADLE AND A LEVER COMES UP TO HOLD IT INTO PLACE. THE CRADLE WEARS AND THE REEL SHAFT GETS SLOPPY AND THE LEVER NO LONGER TOUCHES THE REEL SHAFT HOLDING IT IN PLACE. HAMMER DOWN AND BEND THE LEFT SIDE OF THE REEL MECHANISM SO THE LEVER CAN'T RISE UP. NOW THE REEL SHAFT CAN'T JUMP OUT. SINCE THE REEL STAYS IN, IT NOW WILL GET KICKED AROUND.

BEFORE DOING ANY OF THE ABOVE, TRY SHORTENING THE LONG SPRING AT THE BOTTOM OF THE REEL MECHANISM THAT APPLIES TO THE 1ST REEL.

PROBLEM

REEL(S) DON'T SPIN - SPORADIC.

SOLUTION

CLOCK OR CLOCK GEAR - REPLACE. IF ALL REELS DON'T SPIN AT ALL, THE PIN IN THE CLOCK COULD BE SHEERED OFF. IF ONE OR MORE REELS DON'T SPIN IT COULD ALSO BE THE PIN SHEERED OFF IN THE LARGE SHAFT THAT GOES ACROSS THE BACK BOTTOM OF THE REEL MECHANISM. THE PINS ARE IN THE BACK LOWER LEFT AND RIGHT CORNER OF THE REEL MECHANISM (FACING THE MACHINE). THE BROKEN PIN MAY ALLOW SOME TURNING OF THE SHAFT WHICH ALLOWS 1 OR 2 OF THE REELS TO SPIN. ALSO, THE LARGE SHAFT COULD BE NOT TURNING ENOUGH TO ALLOW THE REELS TO BE KICKED AROUND. TO INCREASE THE ROTATION OF THE LARGE SHAFT THE LATCH PAWL ASSEMBLY ("O" IN BALLY MANUALS) NEEDS TO BE CLOSER TO THE TRIP LEVER ASSEMBLY ("N" IN BALLY MANUALS). THE LATCH PAWL ASSEMBLY IS ON THE VERY LOWER RIGHT BACK OF THE REEL ASSEMBLY (FACING THE MACHINE).NOW, INCREASE THE LENGTH OF THE THREADED SHAFT ASSEMBLY ("F" IN BALLY MANUALS). IT'S THE SHAFT ENCLOSED BY A HUGE SPRING. AT THE BACK END IS A NUT. MOVE THE NUT TOWARDS THE BACK OF THE REEL ASSEMBLY AND MOVE THE OTHER NUT NEAR IT ALONG THE SHAFT ALSO. NOW THE LATCH PAWL WILL BE CLOSER TO WHERE IT SHOULD BE AND WILL TURN THE MAIN LARGE SHAFT FARTHER. ALSO, IT MAY BE NECESSARY TO MOVE THE TRIP OPERATING LEVER STOP BRACKET TO THE LEFT BY LOOSENING THE TWO BOLTS THAT HOLD IT. THIS ALLOWS THE LATCH PAWL TO TRAVEL FARTHER AND ROTATE THE MAIN SHAFT EVEN MORE. AFTER THIS IS DONE IT MAY BE NECESSARY TO ADJUST THE DASH POT SWITCH TO ACCOUNT FOR THE ABOVE MOVES. AFTER ALL THIS ADJUSTING IT COULD BE THAT THERE IS JUST TOO MUCH WEAR ON THE PARTS.

HERE'S A QUICK SOLUTION WHEN YOU PULL THE HANDLE AND IT JUST WON'T START THE REELS SPINNING. LOOK AT THE RIGHT SIDE OF THE REEL MECHANISM AND SEE THE TWO BIG GEARS. THE TRICK IS TO ROTATE THE LOWER GEAR ONE NOTCH CLOCKWISE. REMOVE THE RETAINING RING THAT HOLDS THIS GEAR ON. POKE THE GEAR OUT, ROTATE ONE NOTCH CLOCKWISE, FIT THE GEARS TOGETHER, PUT THE RING BACK ON AND THE HANDLE SHOULD SPIN THE REELS.

ANOTHER CAUSE OF A REEL (S) NOT SPINNING OCCURS WHEN THE WIPER (S) IS PRESSING TOO HARD AGAINST THE CONTACTS. SINCE THE WIPER DOESN'T GET PUSHED BACK THE LEVERS JUST STAY PUT IN THE REEL DISCS AND THE REEL CAN'T BE KICKED SO THAT IT WILL SPIN. RELIEVE THE TENSION ON THE WIPERS SO THEY GO IN AND OUT EASILY BY HAND. OR, IF THE WIPERS GO BACK AS FAR AS THEY ARE SUPPOSED TO ONE OF THE WIPER FINGERS COULD BE HUNG UP ON A BUTTON CONTACT. THE ENTIRE WIPER WON'T WIPE

BECAUSE ONE OF ITS FINGERS IS STUCK.

IF ALL REELS DON'T SPIN AND JUST GO "CLUNK" IT COULD BE THAT A TINY SPRING HAS FALLEN OFF A CLOCK GEAR. THE CLOCK IS ON THE LEFT SIDE OF THE REEL MECHANISM (IT HAS A FAN THAT WHIZES AROUND WHEN THE REELS ARE TURNING). THE CLOCK HAS TWO LARGE GEARS - ONE FAT, ONE SKINNY. THE SKINNY GEAR HAS LITTLE LATCHES THAT HAVE LITTLE SPRINGS ON THEM. IF A SPRING HAS COME OFF, THE CLOCK WILL GO "CLUNK" AND SO WILL THE REELS. PUT THE SPRING BACK ONTO THE LITTLE POST.

PROBLEM

THE HANDLE DOESN'T PULL DOWN FAR ENOUGH TO KICK THE REELS. YOU HAVE TO THUMP THE HANDLE DOWN REAL HARD TO START THE REELS GOING AROUND.

SOLUTION

THE QUICKEST AND SIMPLEST WAY IS TO TAKE THE REEL MECHANISM OUT. NOTICE THERE IS A FORK POINTING OUT TOWARD YOU ON THE RIGHT SIDE. THE REEL MECHANISM SLIDES INTO THIS FORK AND THE FORK MOVES WHEN THE HANDLE IS PULLED. HIT THE FORK WITH A HAMMER WITH A DOWNWARD MOTION. BEND THE FORK DOWN JUST A TINY BIT. NOW THE HANDLE GIVES MORE ROTATION. ONE GUY HIT THE FORK TOO HARD AND BROKE IT RIGHT OFF!

PROBLEM

THE REELS SPIN, THEN THE FIRST REEL STOPS AND THE REST KEEP SPINNING.

SOLUTION

ON THE LEFT SIDE OF THE REEL MECHANISM IS A "CLOCK" WITH A FAN AND GEARS. SOMETIMES THE TEETH WEAR OFF IN THE LARGEST GEAR AND THE GEAR GETS STUCK WHEN THE FLAT PART HITS ANOTHER GEAR. IN THIS CASE THE LARGEST GEAR WAS REPLACED AND THE MACHINE WORKED FINE AGAIN.

PROBLEM

THE HANDLE DOESN'T PULL DOWN FAR ENOUGH TO SPIN THE REELS NO MATTER HOW HARD YOU THUMP IT.

SOLUTION

THIS WAS RARE! ON THE RIGHT SIDE OF THE REEL MECHANISM ARE 2 THICK GEARS. THE SECOND ONE (FROM THE FRONT) FITS INTO AN OPENING. THAT OPENING HAD BROKEN AWAY FROM THE SURROUNDING METAL. THE FACTORY WELD HAD BROKEN. NOW THE GEAR DID NOT "CATCH" AND DO ITS JOB. THE REELS DID NOT "KICK OFF". WELD THE BREAK.

UPPER UNIT

PROBLEM

IRREGULAR LIGHTING PATTERNS APPEAR IN UPPER UNIT AS EACH COIN IS ENTERED.

SOLUTION

THERE IS A COLD SOLDER (A LOOSE CONNECTION) IN A GROUND WIRE ON THE BACK OF THE LIGHT BOARD IN THE TOP UNIT.

FREE PLAYS

PROBLEM

MACHINE PLAYS WITHOUT A COIN BUT DOES NOT PAY OFF. THE HANDLE SWITCH TRIPS AFTER THE CYCLE IS COMPLETED YET NO COIN IS NEEDED.

SOLUTION

IN THE UPPER UNIT THERE IS A STACK OF SWITCHES WHICH TOUCH A POST ON A PLASTIC STEP-UP DISC. ONE OF THE WIRES GOING TO ONE OF THESE SWITCHES IS BROKEN OR NEEDS TO BE SOLDERED.

PROBLEM

MACHINE PLAYS WITHOUT A COIN.

SOLUTION

1. THE HANDLE RELEASE SOLENOID WORKS SPORADICALLY CAUSING THE LATCH WHICH ALLOWS THE HANDLE TO FUNCTION TO FALL INTO PLACE. ONE CAUSE OF THIS IS THE VERTICAL SWITCHES NEEDING ADJUSTMENT ON THE LEFT SIDE OF THE REEL MECHANISM. WATCH THE MACHINE IN THE DARK WITH THE DOOR OPEN AND SEE THE SPARKS AS THESE SWITCHES ARC. IF THE PIN THAT HOLDS THE MAIN SHAFT THAT GOES ACROSS THE BACK BOTTOM OF THE REEL MECHAMISM IS BROKEN THE HANDLE WILL CONTINUE TO WORK WITHOUT A COIN INSERTED. USUALLY WHEN THIS HAPPENS ONE OR MORE REELS GO 'CLUNK' WITH NO SPIN. REPLACE PIN - BACK LOWER LEFT CORNER OF REEL MECHANISM (ON THE SIDE).
2. SEE THE SECTION "COIN PROBLEMS" AND THE PROBLEM "MACHINE PLAYS WITHOUT A COIN!"

OTHER

PROBLEM

BELL RINGS WHEN DOOR IS CLOSED

SOLUTION

THE BULB HOLDER ON THE DOOR (TOP RIGHT AS YOU LOOK AT THE OPEN DOOR) IS TOUCHING THE DOOR HINGE (TOP LEFT AS YOU LOOK AT THE CABINET WITH THE DOOR OPEN). MOVE THE BULB HOLDER, IF PRACTICAL, OR TAPE BOTH THE BULB HOLDER AND THE HINGE SO THEY DON'T TOUCH METAL-TO-METAL.

PROBLEM

THE HOLD AND DRAW LIGHT AND THE DRAW FEATURE DO NOT WORK ON A MACHINE WITH A HOLD FEATURE (I.E. MONTE CARLO).

SOLUTION

CLEAN AND ADJUST THE HOLD AND DRAW SWITCH. IT IS LOCATED ON THE HOPPER AT ABOUT THE 9 O'CLOCK POSITION ON THE SPIRAL DISC THAT INDEXES AROUND AS EACH COIN IS COUNTED. IT IS ATTACHED TO AND BELOW THE ZERO SWITCH. IF IT IS NOT MAKING GOOD CONTACT THE HOLD AND DRAW LIGHT WILL NOT GO ON.

PROBLEM

BELL RINGS AFTER A PAYOFF IS MADE AND KEEPS RINGING, BUT IT DOES STOP RINGING ON THE NEXT PLAY.

SOLUTION

OPEN THE "A" SWITCH ON THE REEL MECHANISM SO THAT IT NEVER CLOSES. JUST SPREAD THE TWO CONTACTS NEAREST THE FRONT OF THE MACHINE SO THEY WON'T TOUCH. NOW THE BELL RINGS AND STOPS WHEN IT IS SUPPOSED TO. THE "A" SWITCH IS AT THE LEFT SIDE OF THE REEL MECH NEAREST THE REAR OF THE REEL MECHANISM. IT IS A VERTICAL SET OF SWITCHES.

PROBLEM

THE INSIDE WORKINGS OF THE MACHINE JUST CAN'T BE SEEN FROM OUTSIDE THE MACHINE.

SOLUTION

MAKE A SET OF TEST CABLES. THESE ARE BEAU PLUGS JOINED BY A BUNCH OF 6 FT. LONG WIRES. NOW, THE UPPER UNIT, THE REEL MECHANISM, OR THE HOPPER CAN BE PLAYED OUTSIDE THE MACHINE. CONTACTS CAN BE TOUCHED ONE AT A TIME TO SEE IF ALL OF A SUDDEN THEY WERE THE PROBLEM. IN THE HOPPER, COINS CAN BE WATCHED TO SEE WHAT IS WRONG. EACH MACHINE ACTION CAN BE WATCHED.

PROBLEM

THE CREDIT BUTTON WOULD BE PUSHED BUT NOTHING WOULD REGISTER, OR THE INDICATOR WOULD GO ONLY HALF WAY. THIS HAPPENED TO A SUPER CONTINENTAL.

SOLUTION

IN THE UPPER UNIT ON THE RIGHT SIDE IS THE CREDIT UNIT. ON THE RIGHT SIDE OF THE CREDIT UNIT IS A PLUNGER THAT GOES INTO THE SOLENOID. THE PLUNGER IS DIRTY AND STICKING. CLEAN IT.