Royal Products Corporation

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THE MITSUBISHI "ZERO"

The Japanese Zero -- one of the most famous fighter planes ever known -- was built by the thousands and became very much respected by those who flew against it. A casual glance at the outlines of this beautiful craft reveals its potential as a fine pattern or Sunday flyer in addition to being a fine scale job.

There have been reams of print devoted to this amazing airplane, so you will have no trouble whatsoever in locating scale data. Just a word of caution -- this plane, like all popular ones, has many, many versions, so do be sure you don't cross features of one model series with those of another.

For this kit, we have chosen to detail the A6M5 (the series numbers varied from A6M1 to A6M8). If you intend this to be a serious scale effort you may obtain a beautifully detailed set of blueline drawings of the A6M5 from:

SUPERSCALE
Dept. P, P. O. Box 201
Arlington, Texas

The following information is taken from these drawings:

The original "Zero", known also by the code name "Zeke", was a product of a design team headed by Jiro Horikoshi of Mitsubishi Aircraft Company. One of its more famous pilots was Saburo Sakai and the Superscale subject was assigned to the Yokosuka Navy Air Force. Standard coloring of fuselage, upper wings and tail is dark green. The bottom of the plane is light grey, the prop is dark green with yellow tips and it has a red spinner. The insignia is red with a thin white border.

Specifications are as follows:

Wingspan: 36'1" Length: 29' 9"
Height: 9' 2"
Engine: SAKAE 21 1130 Horsepower 14 Cylinders
Empty Weight: 3,860 lbs. Gross Weight: 5,920 lbs.
Max. Speed: 347 m.p.h. at 20,000 Feet
U. S. Name: Zeke 52 -- Japanese Name Zero-Sen Type 52 A6M5
Manufactured by Mitsubishi and Nakajima
Armament: 2 x 20 m.m. wing cannons, 7.7 m.m. machine guns in the fuselage and 2x 60 kg bombs.

CONSTRUCTING THE "ZERO"

Before gluing anything together take time to spread out the plans and carefully study the details. Lay out all the parts (which are stamped with identifying numbers matching the drawings). Make sure you understand where everything goes. Notice, also, the scale detailed drawings such as elevator, aileron structures, landing gear and cockpit details.

Lay out all the parts marked with an "S" number and notice their varying thicknesses. Draw a straight line on one side of S-7 and then pin it in place with the line toward the ribs. Next draw a centerline on each rib and on the sides of the S-6's toward the ribs. Pin the S-6's in place with scrap balsa under them to raise their centerlines even with the centerline of S-7. Glue S-8 in place with one S-1 on each side, insuring that the S-1 centerlines coincide with those of S-6 and S-7. Glue the remaining ribs in place and properly aligned. Allow this structure to dry. When dry, trim down the S-6's and S-7, glue both skins (S-10's) in place, secure with tape and trim the ends. Next, glue the S-9's in place. Trim the S12's leading edge curve, center them and glue to S-11's. Next, spot glue these elevators in place on S-7. Also spot glue S-13's in place, trim and sand this entire horizontal stab to shape. Cut the elevators loose and install the control horn.

Draw centerlines on the W-1's, W-6's and W-11's wing ribs. Pin the W-12 main wing spar in position and while working rapidly, glue the ribs W-1 through W-11 in place. Slip a scrap $\frac{1}{4}$" sq. x 36" length of balsa under the aft end of the ribs and adjust it so the centerlines on the W-1's, W-6's and W-11's are all parallel. Pin ribs in place on this strip. Add the W-13's and allow to dry thoroughly. When dry, glue the trailing edge sheet in place and mark the aileron outline on it. Remove this structure from the work surface and install the aileron linkage and aileron horn. Pin structure down on surface (upside down) and add the W-22 (between W-1 and W-2) and then the trailing edge sheet. Build the opposite wing in the same manner and add the W-20 and W-21 dihedral braces as you join the two halves together. The landing gear is installed next. If you choose fixed gear, install the W-16's 17's, 18's and 19's in that order. When dry, add the remaining top and bottom sheet balsa and secure it with tape. Trim the leading edges and add W-14's, W-25 and wing tip blocks (W-23's and W-24's) in that order. When dry, sand to shape and cut out the ailerons, install W-33's, W-31's and W-32's in that order. The fairing blocks W-22A's, W-26's, W-27's and W-28's are shaped and added when the wing is mated to the fuselage.

The vertical fin and rudder are built "in hand". Glue R-6 in place on one R-1. Then add R-2, R-3, R-4 and R-5 in that order. Now add the remaining R-1 and tip block R-7. DO NOT SAND YET! Build the vertical fin in the same manner and spot glue the two together and sand to shape.

The fuselage is round, tapered and extremely difficult to align, but it must be built straight for best performance. Study the plans until you are sure where

every last piece goes and how it fits. Use the isometric drawings near the aft end of the fuselage side and top views as a guide. Lay the F-11's in place on the sideview and mark locations of F-2A, F-2, F-16, F-4 and F-5 carefully. Begin by gluing F-12's inside the F-11's. Next, install and glue the engine mounts (EM) F-1 and F-2A in that order. Align this structure carefully and be sure it is square. Next add F13's, F-14 and F-15, F-2, F-3, F-4, F-5, and F-6 in that order. Use F-17A and F-17B's to locate F-4, then use F-18 to locate F-5. Add F-16A, B and C in front of F-3 and install the two side stringers in that order. Sight down this structure and insure it is straight and true.

The wing saddle is installed by adding W-25, F-34's, and F-20's, F-21's, F-22A's, F-23A, F-22B's and F25's in that order. Glue F-24 on F-7 as shown, then install the F-19 side plankings. Align them with the side stringers as shown. Do not install the bottom planking until the tail blocks -- elevator and tailwheel linkage is all installed. Bolt the steerable tailwheel assembly to F-10 and install it at the end of F-19's. Add F-28 blocks, the horizontal stab, F-29's, F-30, F-31, and F-32 the vertical fin and rudder in that order. Carve and sand it all to shape then add the remaining fuselage planking to the sides and top while fairing it all into the tail smoothly. The F-33's are to be carefully sanded to shape and installed as fairings to smooth the fuselage into the tail feathers. After the tail control linkage is installed, the wing fitted to the fuselage with hold down bolts and hardwood dowels and the lower planking added, the wing fairings are then carved and sanded to shape. Notice the contour shown in a drawing beneath the "insignia" on the fuselage sideview.

Cockpit details are to be added at this time. F-4A is installed above F-18 (behind F-4) and F-35 is located on the top planking to support the canopy. Pay particular attention to the shape of F-17A and F-17B blocks as you carve and sand them to shape.

Install your engine, tank and controls at this time. Next, fit the cowl in place using hardwood blocks to support it and screws to secure it as shown. Be sure to coat all the exposed wood in the engine/tank areas with fuel proofer such as epoxy or polyester resins. Add as much detail as you like depending on your ambition and your scale data.

Prepared and Written For ROYAL PRODUCTS CORP.
By James L. Simpson

THE FINISH WORK

THE CONSTRUCTION PHASE CONCLUDED WITH THE REMAINING PARTS BEING STUCK ONE TO ANOTHER AND/OR "SHAPE" SANDED. THIS PILE OF PARTS WHICH MAY RESEMBLE AN AIRPLANE DEPENDING ON ARRANGEMENT MUST NOW BE FINISHED TO SATISFY THE GOAL.

ONE OF THE KEYS TO A GOOD FINISH IS SAND, SAND, SAND, DUST IT OFF AND SAND ONCE MORE. REMEMBER THAT, AS IT'S IMPORTANT. THE FIRST SANDING IS DONE WITH ROUGHER OPEN COAT SAND PAPER (I PREFER ALUMINUM OXIDE OR GARNET PAPER) 280-320 RANGE. I GLUE MINE TO 1"X4"X12" BLOCKS WITH SPRAY CONTACT ADHESIVE OR "STICKY BACK" BY SCOTCH. IT'S BEST TO SAND ALL COMPONENTS PRIOR TO FINAL ASSEMBLY AND IS ALSO MUCH EASIER. THE NEXT SAND IS DONE WITH 320-400 GRIT PAPER. AFTER THIS STEP TAKE A GOOD REST, THEN COME BACK AND SAND UNTIL TIRED AGAIN. NOW WIPE THE PLANE DOWN WITH A CLEAN SOFT RAG AND CHECK IT FOR SEAMS, LOW SPOTS, AND SYMMETRY. THEN SAND ONCE MORE WITH THE 400 GRIT.

IF YOU PLAN TO "MONOKOTE" YOUR EYEBALL SCALE, IT IS DONE AT THIS STAGE ON BARE WOOD AND IN ACCORDANCE WITH THE DIRECTIONS FURNISHED WITH THE "MONOKOTE". AFTER IT'S ALL MONOKOTED, GO TO THE FINAL ASSEMBLY STEP.

IF YOU PLAN AN ULTIMATE SCALE JOB FINISH YOU MUST PAINT IT 'CAUSE NO REAL AIRPLANES ARE MONOKOTED. (TOO BAD, THOUGH!) YOU MUST DECIDE WHAT TYPE HINGES YOU WILL USE NOW BECAUSE IT MAKES A DIFFERENCE. IF YOU ARE GOING TO USE HINGES WITH REMOVABLE HINGE PINS, THEN INSTALL ALL HINGES AND CONTROL RODS, LINKAGE, RADIO GEAR, (ACCORDING TO MANUFACTURERS INSTRUCTIONS) ETC., AT THIS TIME. THEN DISMANTLE IT AND COVER IT INDIVIDUALLY. IF YOU ARE TO USE "HIDDEN" HINGES (LIKE THE NO GLUE MOLDED NYLON ONES) THEN COVER ALL THE SEPARATE PIECES AND THEN ASSEMBLE THEM.

TO PREPARE THE MODEL FOR COVERING, YOU DOPE THE BALSA WITH AT LEAST A 50/50 DOPE-THINNER MIXTURE. AFTER EACH COAT SAND LIGHTLY AND CONTINUE UNTIL NO "FUZZ" OCCURS AFTER DOPING. (USUALLY 3 OR 4 COATS). NOW COVER WITH THE MATERIAL OF YOUR CHOICE (FOR INSTANCE, SILK, SILRON, NYLON ETC.) CHECK THE GRAIN (LOOK AT A CORNER OF THE MATERIAL TO DISCOVER THE GRAIN IS PARALLEL TO THE HEAVIEST OR MOST DENSE THREADS WHICHEVER THE CASE). THE GRAIN MUST GO LENGTHWISE ON EACH PIECE.

TO APPLY THE COVERING, CUT IT OVERSIZE, HOLD IN PLACE AND SPRAY WITH A FINE FINE MIST WATER SPRAYER CAREFULLY WORKING OUT ALL THE WRINKLES AND DOPE IT WHILE STILL WET WITH THE BRUSH NEARLY PARALLEL TO THE SURFACE AND LIGHTLY, LIGHTLY STROKING IT. IF DONE WHILE WET, THE DOPE WILL "FLOAT" ON THE DAMP SURFACE AND DRY "WHITE OR CLOUDY" BUT WILL REQUIRE FAR FEWER COATS AND THE CLOUDY LOOK WILL DISAPPEAR AFTER THE 2ND OR 3RD COAT.

CAREFULLY TRIM (WITH A DOUBLE EDGE RAZOR BLADE) AND SAND THE "ROUGH" AREAS BUT BE CAREFUL NOT TO "CUT" OR "SAND" OUT THE FIBERS OVER A "HIGH" PLACE LIKE A RIB.

WHEN SURFACE REMAINS SMOOTH AFTER A COAT OF DOPE (3RD OR 4TH COAT) IT'S TIME TO THIN THE MIXTURE AND ADD TALC OR CORNSTARCH FOR FILLER "BODY". SAND AFTER EACH COAT

UNTIL DESIRED SMOOTHNESS IS ACHEIVED. THEN ASSEMBLE THE PARTS AND SPRAY PAINT THE FINAL COLORS TO SUIT. JUST REMEMBER ALOT OF PLANES MODELED ARE GLOSSY WHEN THE PROTOTYPE WAS NOT. THIS MISTAKE COSTS POINTS. AS I MENTIONED EARLIER, I WON'T PRESUME TO ADVISE ON ACHIEVING THE "ULTIMATE SCALE" FINISH, BUT IF IN DOUBT, THERE ARE VOLUMES WRITTEN ON THE SUBJECT. THERE MAY EVEN BE A "SCALE NUT" IN YOUR AREA WHO CAN HELP. DON'T FORGET THE PLASTIC MODELER WHO KNOWS FINISHES. REMEMBER ALSO, THE PLASTIC MODEL IS AN EXCELLENT SOURCE OF SCALE DETAIL AS WELL.

AIRCRAFT ALIGNMENT

THIS SHEET IS INCLUDED AS AN ADDITION TO THE NORMAL INSTRUCTIONS IN HOPES THAT YOU MAY BENEFIT FROM THE INFORMATION IT CONTAINS. THE TIME IT TAKES TO ACCURATELY ALIGN AN AIRPLANE IS REPAYED MANY, MANY TIMES BY THE SUPERIOR PERFORMANCE OF THE AIRCRAFT.

ALL ALIGNMENT INFORMATION IS INCLUDED ON THE PLANS. NOTE THAT WING AND STAB ANGLES, THRUST ANGLES, ETC., APPEAR NEAR THEIR COMPONENT LOCATIONS. GENERALLY, THE ANGLES ARE REFERENCED TO A FUSELAGE CENTERLINE WHICH IS ALSO DRAWN ON THE PLANS.

MOST ANGLES ARE EXPRESSED IN DEGREES OF ANGULAR OFFSET. DON'T LET THIS STOP YOU FROM USING THEM! THE LEAST EXPENSIVE CONVERSION METHOD IS TO BORROW AN ALGEBRA BOOK WHICH HAS TRIGONOMETRY SECTIONS. USE THE FORMULAS TO CONVERT THE DEGREES TO FRACTIONS OF AN INCH OF OFFSET. THE EASIEST METHOD IS TO USE A ROBART INCIDENCE METER. THIS DEVICE IS CALIBRATED IN DEGREES AND ALLOWS DIRECT READINGS OF THE INCIDENCE ANGLES.

THE FIRST STEP IN ALIGNING THE AIRCRAFT IS TO TRANSFER THE CENTERLINE TO THE FUSE SIDES. USUALLY THE CENTERLINE RUNS PARALLEL TO A MAJOR PIECE OF THE FUSE SUCH AS THE TOP EDGE OF THE SIDE. USE A FELT TIP PEN AND DRAW A LINE PARALLEL TO THE CENTERLINE ABOVE THE WING SADDLE AND BELOW THE STAB SADDLE.

NEXT, MARK THE CENTERLINES OF THE LEADING AND TRAILING EDGES ON THE STAB AND WING. MAKE A TEMPLATE FROM THE PLANS TO TRANSFER THIS LOCATION.

PLACE THE FUSE ON THE WORKBENCH AND BLOCK UP SO THAT THE CENTERLINE IS PARALLEL TO THE TABLE TOP. NOW PLACE THE STAB IN ITS SADDLE AND TRIM AND SKIM IT UNTIL THE LEADING AND TRAILING EDGES ARE AT THE REQUIRED DIFFERENT ANGLES. LET'S SAY THE PLANS CALL FOR 1/16" POSITIVE INCIDENCE. THAT MEANS THE CENTER OF THE LEADING EDGE IS 1/16" HIGHER (REFERENCED TO THE TOP) THAN THE CENTER OF THE TRAILING EDGE. IT MAKES NO DIFFERENCE HOW FAR UP THE TRAILING EDGE IS FROM THE WORK SURFACE--JUST MAKE THE LEADING EDGE 1/16" HIGHER. THE STAB MAY HAVE POSITIVE, NEGATIVE, OR NO INCIDENCE DEPENDING ON THE DESIGN.

ALIGN THE WING THE SAME WAY. A METHOD TO USE, WHERE DOWELS ARE EMPLOYED ON THE LEADING EDGE. IS TO DRILL THE DOWEL HOLES IN THE BULKHEAD HIGHER THAN NECESSARY (TOWARD THE TOP OF THE FUSE IN A LOW WING DESIGN). NOW, WHEN THE WING IS PUT IN PLACE, THE TRAILING EDGE WILL STICK UP OFF THE WING SADDLE. USING A RAT TAIL FILE, ELONGATE THE HOLES DOWNWARD UNTIL THE WING IS AT THE CORRECT INCIDENCE. IF THERE IS A GAP ALONG THE WING SADDLE USE BALSA, PLY, OR FILLER TO CLOSE. IF YOU WANT TO USE WING SEATING TAPE, BE SURE TO MAKE ALL YOUR MEASUREMENTS WITH THE TAPE IN PLACE.

THE WING AND STAB MUST ALSO BE CHECKED TO BE SURE THEY HAVE THE SAME LENGTH EXTENDING OUT FROM THE FUSELAGE. USE A BALSA STICK OR YARDSTICK AND BE SURE THAT IF THE TOTAL WINGSPAN IS 70" THAT 35" MINUS 1/2 THE FUSE WIDTH, EXTEND ON EACH SIDE OF THE FUSELAGE.

NEXT, BE SURE THE WING AND STAB ARE NOT SKEWED ON THE FUSELAGE OR TO EACH OTHER. USE A PIECE OF NON-STRETCHABLE STRING AND TIE A LOOP IN ONE END. PIN THROUGH THE LOOP ATTACHING THE STRING IN THE EXACT CENTER OF THE FUSELAGE. FOR THE WING ATTACH NEAR THE TAIL. (NEAR NOSE FOR STAB) MEASURE OUT TO ONE TIP AND THEN GO TO THE OTHER TIP. IT MUST BE THE SAME DISTANCE. DO THIS FOR THE WING AND STAB.

THE LAST THING TO CHECK IS THAT THE WING AND STAB ARE NOT TILTED. CAREFULLY SIGHT FROM THE FRONT AND BE SURE THAT ONE TIP OF THE STAB DOES NOT DROOP LOWER THAN THE OTHER.

AS YOU CAN SEE, THESE 5 PARAMETERS MUST BE COMPLETED TAKING INTO ACCOUNT THE OTHER 4 AS ONE IS BEING WORKED UPON. USUALLY, WE ESTABLISH THE STAB INCIDENCE, EQUAL EXTENSION, SKEWNESS FIRST, AND THEN GLUE THE STAB IN POSITION WHILE SIGHTING FROM THE FRONT WITH A STRAIGHT ROD RESTING ON THE

THE LAST DIFFICULT AREA IS THE FIN AND RUDDER. BE SURE THE FIN IS PERPENDICULAR TO THE STAB. A LARGE RIGHT TRIANGLE IS NECESSARY FOR THIS STEP. ALSO, SIGHT CAREFULLY FROM THE FRONT TO BE SURE THAT THE FIN IS INLINE WITH THE TOP CENTERLINE. SIGHT FROM THE FRONT AND MAKE SURE YOU SEE THE SAME AMOUNT OF EACH SIDE OF THE FIN.

MOTOR OFFSET IS DIFFICULT TO MEASURE. IF THE ROBART GAUGE IS USED, IT IS EASY. INCASE YOU DON'T USE THE GAUGE, ABOUT THE BEST METHOD IS TO DRAW THE THRUST LINE ON THE NOSE OR NACELLE AND THEN EXTEND THIS LINE WITH A STICK. MEASURE FROM THE CRANKSHAFT TO THE STICK AND COMPARE WITH WHAT THE PLANS CALL FOR. REMEMBER THAT THRUST ANGLES MAY BE ALTERED WITH SKIMS OR OVERSIZE MOTOR MOUNT HOLES. WHEN YOU VERIFY THAT THE THRUST IS CORRECT, FILL THE UNNEEDED PART OF THE HOLE WITH EPOXY TO MAINTAIN STRENGTH.

WE ARE SURE THAT IF YOU TAKE THE TIME TO COMPLETE THE ABOVE STEPS YOU WILL HAVE MUCH MORE SATISFACTION FROM YOUR NEW MODEL.

BALANCE AND FLIGHT

THERE BEFORE YOU, IS THE RESULT OF THESE MANY EFFORTS. ALL OF THE WORK IS DONE, YOU SAY. NAY, SAY I. ALL OF WHAT IS DONE, ANYONE COULD DO. WHAT LIES AHEAD IS IMPORTANT FOR IT MAKES AN ALMIGHTY DIFFERENCE.

THIS PHASE BEGINS WITH THE MODEL READY FOR FLIGHT AND ENDS WITH A SUCCESSFUL LANDING. BEGIN WITH THE AIRPLANE ASSEMBLED AS IF TO FLY. SET IT ON A SMOOTH SURFACE WITH A PLAIN UNBROKEN BACKGROUND AND GO AROUND BEHIND THE CRAFT AND "EYEBALL" IT. VERY CAREFULLY CHECK TO SEE THAT THE RUDDER AND VERTICAL FIN ARE PERFECTLY ALIGNED. IN THE CASE OF TWIN RUDDERS, MEASURE THEM ACCURATELY. IS THE HORIZONTAL STABILIZER PARALLEL TO THE WING? ARE THERE ANY WARPS IN ANY OF THE FLYING SURFACES? IS THE FUSELAGE STRAIGHT? IF THE ANSWER IS YES TO ALL THESE QUESTIONS, YOU ARE IN GREAT SHAPE. IF NOT, ADJUST IT SO IT IS. YOU KNOW WHAT MUST BE DONE TO ALIGN SURFACES BUT WAIT AWHILE TO DO THAT WHILE WE CONSIDER WARPS.

WARPS ARE CROOKED OR "BENT" SURFACES. THEY CAUSE MOST ACCIDENTS. IT ISN'T NECESSARY AS THEY CAN BE FIXED. ON ANY WOOD AIRPLANE WHICH HAS BEEN DOPED OR PAINTED WITH ANY OF SEVERAL DIFFERENT PAINTS THE PROBLEM IS TO SOFTEN THE PAINT AND TWIST THE SURFACE OPPOSITE THE WARP, THEN LET IT HARDEN AGAIN.

THE PAINT CAN GENERALLY BE SOFTENED TWO WAYS. IT CAN BE HEATED OR DISSOLVED. TO HEAT IT, USE STEAM. IF A SMALL SURFACE IS THE PROBLEM, A TEAKETTLE OVER A STOVE DOES NICELY. IF A LARGE SURFACE IS WARPED, THE OUTLET BEHIND A STEAM CLEANING PLANT WILL DO THE JOB. YOU APPLY BOTH SIDES OF THE WARPED SURFACE TO THE STEAM UNTIL GOOD AND HOT, THEN HOLD OPPOSITE WARP, REMOVE FROM STEAM AND ALLOW TO COOL WELL. WAIT AWHILE, THEN CHECK AGAIN. DO THIS UNTIL THE WARP IS GONE.

TO DISSOLVE THE PAINT, USE MORE COATS OF PAINT OVER BOTH SIDES OF THE WARP. THIS DOESN'T WORK ON ALL PAINT, BUT HAS BEEN DONE SUCCESSFULLY WITH DOPE AND LACQUER. I HAVE ALSO SEEN GUYS FASTEN THE SURFACE DOWN IN PROPER POSITION AND PAINT AND PAINT UNTIL IT WILL STAY. THAT'S THE HARD WAY.

NOW THAT ALL THE WARPS ARE GONE, REASSEMBLE THE PLANE, PUT IT ON A TRUE FLAT SURFACE AND MEASURE THE DISTANCE FROM THAT SURFACE TO LEADING EDGE OF WING, THEN FROM THE SURFACE TO TRAILING EDGE OF WING AT SAME STATION (CHORD POINT) AND VERIFY THAT IT AGREES WITH THE INCIDENCE SHOWN ON THE PLANS. DO THE SAME FOR THE TAIL. IF IT DOESN'T AGREE, DO WHATEVER IS NECESSARY TO MAKE IT AGREE.

NEXT CHECK THE THRUST. FASTEN A STRING TO THE CENTERLINE OF THE PLANE BACK NEAR THE TAIL AND COMPARE THE DISTANCE TO EACH PROP TIP WITH THE PROP HORIZONTAL INSURING THAT THE OFFSET AGREES WITH THAT SHOWN ON THE PLANS. THEN VERTICAL FOR DOWNTHRUST.

NOW, CHECK THE BALANCE POINT TO BE SURE IT IS EXACTLY AS SHOWN ON THE PLAN. IF NOT, ADD WEIGHT OR RELOCATE THE RADIO IN SUCH A MANNER THAT IT AGREES WITH THAT SHOWN.

LASTLY, TURN THE RADIO ON AND OPERATE ALL THE SURFACES ONE AT A TIME TO INSURE THAT THEY MOVE IN THE PROPER DIRECTION, DO NOT BIND, DO NOT INTERACT WITH OTHER CONTROLS AND DO RUN SMOOTHLY. WHEN YOU HAVE SATISFIED ALL THESE REQUIREMENTS, PUT THE OUTFIT ON CHARGE ALL NIGHT BEFORE YOU GO FLY.

WHEN YOU GET TO THE FIELD, DON'T BE AFRAID TO ASK AN EXPERT TO FLY YOUR PLANE FOR YOU IF YOU ARE A NOVICE OR IF YOU HAVEN'T FLOWN IN AWHILE.

IF YOU DECIDE TO FLY IT YOURSELF, PLAN YOUR FLIGHT FROM TAKEOFF, THROUGH CLIMB, TURNS, PATTERN, APPROACH AND LANDING WITH CAREFUL CONSIDERATION GIVEN TO WIND DIRECTION, RUNWAY ORIENTATION, OTHER TRAFFIC AND RELATIVE POSITION OF THE SUN.

I HAVE SEEN EVERYTHING MENTIONED IN THIS CHAPTER CAUSE A SCALE JOB TO CRASH WHEN NOT DONE PROPERLY, SO IF YOU WILL CAREFULLY TEND EACH ONE OF THESE POINTS, YOUR ODDS WILL BE MUCH MUCH BETTER. DON'T YOU AGREE?

GOOD LUCK AND HAPPY LANDING!

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CONGRATULATIONS ON HAVING JUST PURCHASED ONE OF THE FINEST SCALE MODEL KITS AVAILABLE TODAY. .

THERE IS A GREAT DEAL OF INDIVIDUAL DETAIL TO BE TAKEN CARE OF PRIOR TO GLUING A TO B SO SIT BACK, RELAX AND CONSIDER THE FOLLOWING PRELIMINARIES.

YOUR CHOICE OF THIS KIT WAS INITIALLY MOTIVATED BY SOME PRIOR EXPERIENCE OR PREFERENCE FOR THIS PARTICULAR MODEL. PERHAPS IT IS A REAL PLANE OF THE SAME DESIGN YOU HAVE FLOWN OR MAYBE OWN NOW. THE POINT IS, RIGHT NOW, ONLY YOU ARE FAMILIAR WITH THAT FEELING. HAVEN'T YOU NOTICED THAT WHEN YOU SPEAK OF THIS BEAUTIFUL SCALE JOB THERE IS THE CASUAL INDIFFERENT LOOK ON YOUR COMPANION'S FACE? WOULD YOU BELIEVE THE SAME INDIFFERENT FEELING COULD BE IN THE JUDGE'S MIND AS HE INSPECTS THIS BEAUTY YOU WILL CREATE? 'TIS POSSIBLE, ISN'T IT?

THE ABSOLUTE FIRST THING YOU MUST DO AT THIS VERY TIME IS DETERMINE WHETHER THIS IS TO BE THE "ULTIMATE SCALE JOB" OR AN "EYEBALL SCALE". IF YOU CHOOSE "EYEBALL SCALE", WHICH IS JUDGED FROM 25 FEET AWAY, THEN YOU MAY AS WELL TURN TO CONSTRUCTION TECHNIQUES AND START BUILDING! HOWEVER, IF YOUR CHOICE IS "ULTIMATE SCALE" , THEN YOUR PROJECT HAS NOT YET BEGUN.

THE NEXT DECISION YOU MUST MAKE IS WHICH PARTICULAR TYPE, MODEL AND SERIES YOU INTEND TO DUPLICATE TO THE NTH DEGREE. THE TYPE (THAT IS BOMBER, FIGHTER, ETC.) HAS ALREADY BEEN DECIDED AS YOU BOUGHT THE KIT. THE MODEL (THAT IS 24-25-26 ETC) MAY NEED TO BE YOUR CHOICE AS FOR INSTANCE, THERE IS NO EASILY RECOGNIZABLE DIFFERENCE BETWEEN A B-44 AND A B-50. THE SERIES VARY WIDELY AND YOU WILL NEED TO MAKE THIS DECISION YOURSELF. FOR INSTANCE THERE IS VERY LITTLE DIFFERENCE BETWEEN A B-52B, B-52C, B-52D AND B-52E TO THE CASUAL OBSERVER, BUT TO THE TRAINED EYE OF A COMPETITION SCALE JUDGE THIS MAKES THE FIRST GREAT DIFFERENCE.

ONCE YOUR CHOICE HAS BEEN MADE AS TO EXACTLY WHICH TYPE, MODEL AND SERIES YOU WILL BUILD, YOUR NEXT TASK WILL BE TO COMPLY WITH THE "SCALE PRESENTATION". BY THIS I MEAN YOU MUST ASSEMBLE AND ARRANGE THE "PROOF" YOU INTEND TO USE, TO THOROUGHLY CONVINCE THE JUDGE THAT YOURS IS THE BEST OF THE BUNCH! KEEP IN MIND THAT YOU CAN'T "TALK" HIM INTO IT SO EXTRA EFFORT SPENT AT THIS STAGE REAPS GREAT BENEFITS LATER.

START WITH AN ACCURATE, AUTHENTIC 3-VIEW DRAWING PREFERABLY FROM THE MANUFACTURER, AND WHICH GIVES DIMENSIONS OF THE REAL PLANE. IF NOT AVAILABLE, THEN SUCH GREAT WORKS AS THE COMMERCIAL SCALE 3-VIEWS BY NIETO, NYE, WYLAM, SUPERSCALE, ETC. ARE ACCEPTABLE. I KNOW THIS BECAUSE I JUST READ IT IN THE CURRENT AMA MODEL AIRCRAFT REGULATIONS BOOK WHICH INCIDENTALLY IS THE BOOK BY WHICH YOUR EFFORT WILL BE RATED. NEEDLESS TO SAY, BEFORE YOU GO ANY FURTHER, GET REAL FAMILIAR WITH THE RULES FOR SCALE.

ONE MORE WORD OF ADVICE ABOUT THE "SCALE PRESENTATION". THE BETTER IT LOOKS, THE BETTER YOUR SCORE WILL BE SO DON'T CUT CORNERS OR GO SECOND CLASS! 'NUFF SAID?

NOW THAT YOU'VE ASSEMBLED THE 3-VIEW, TECH DATA, PICTURES AND REFERENCES AND CONSTRUCTED A WELL ORGANIZED, WELL PLANNED, EYE APPEALING PRESENTATION, YOU MUST STUDY, COMPARE, MEASURE AND CAREFULLY PLAN THE MODEL YOU WILL BUILD.

FIRST, SELECT THE SCALE RATIO YOU WILL USE. THIS HAS BEEN <u>APPROXIMATED</u> IN OUR KITS BECAUSE THERE ARE SO MANY VARIANTS BETWEEN EACH DIFFERENT SERIES OF THE BASIC AIR PLANE. YOU MAY CHOOSE THE SERIES WHICH IS CLOSEST TO OUR KIT - STILL YOU WILL HAVE TO MAKE ADJUSTMENTS, PERHAPS AN INCH IN WINGSPAN, 1/2 INCH IN LENGTH OR SO ON. THE POINT IS--THIS IS THE TIME TO PLAN FOR THESE ADJUSTMENTS AND THEY MUST ALL BE THE <u>SAME RATIO</u> FOR MAXIMUM POINTS.

THE EASIEST WAY TO DO THIS IS TO OBTAIN A PAIR OF "PROPORTIONAL" DIVIDERS. THIS IS A TOOL WITH A MOVEABLE PIVOT IN THE MIDDLE AND WHEN OPEN LOOKS LIKE AN "X" WITH NEEDLE POINTS AT EACH TIP. WITH THESE YOU MAY SET THE "RATIO" SO THAT MEASURING WITH ONE END OFF THE 3-VIEW WILL GIVE THE DESIRED MEASUREMENT AT THE OTHER END. CAREFULLY ADJUST THE DRAWINGS WE'VE PROVIDED TO <u>EXACTLY</u> MATCH THE 3-VIEW YOU WILL USE.

NEXT, CAREFULLY STUDY THE MATERIAL YOU'VE GATHERED AND MAKE NOTE OF EXACTLY WHICH DETAILS YOU WILL INCLUDE ON YOUR MODEL AND WHERE AND HOW THEY WILL BE INCORPORATED. FOR INSTANCE, DO YOU PLAN ON FLAPS? RETRACTABLE GEAR? LIGHTS? THOUSANDS OF TECHNIQUES ARE INCLUDED IN MAGAZINES AND COLUMNS WHICH ARE DEVOTED TO SCALE CONSTRUCTION TECHNIQUES SO I'LL LEAVE YOU TO HUNT UP ALL THAT FOR YOURSELF.

WE WILL NOW CONSIDER THE BASIC AIRPLANE AND THEN IT'S CONSTRUCTION.

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ROYAL DECALS

General

YOUR ROYAL DECAL SHEET USES A SPECIAL CATALYTIC INK WHICH IS MORE DURABLE THAN TRADITIONAL SOLVENT BASED INKS. THIS FEATURE IS ESPECIALLY ADVANTAGEOUS TO THE MODELER BECAUSE THE END PRODUCT IS STRONGER, THINNER AND IS NOT BOTHERED BY RAW MODEL FUEL OR ANY MODEL AIRPLANE DOPE. DESPITE A SUPERIOR CHEMICAL RESISTANCE, WE STILL RECOMMEND THAT YOU PAINT THE ENTIRE FINISHED MODEL (DECALS AND ALL) WITH A GLOSS OR MATTE CLEAR. THIS WILL KEEP THE FUEL FROM WORKING UNDER AND LIFTING THE DECALS, AS WELL AS GIVING A CONSISTENT SHEEN BETWEEN DECALS AND MODEL FINISH. DUE TO THE WIDE VARIETY OF PAINTS AVAILABLE, WE DO RECOMMEND THAT YOU TEST FOR PAINT COMPATIBILITY, USING SOME NON-ESSENTIAL LETTERING ON THE DECAL SHEET. LET THE PAINT SET FOR ABOUT FOUR MINUTES TO SEE IF IT CURLS OR WRINKLES THE DECAL. IF IT DOESN'T, THE PAINT IS COMPATIBLE.

WHEN APPLYING THE DECALS TO THE MODEL, USE THE SAME SPACING THAT IS NOW ON THE DECAL SHEET. HANDLE THE NUMBERS GENTLY TO AVOID TEARING. THE NUMBERS HAVE NOT BEEN JOINED FOR YOU BECAUSE THE CLEAR BACKING THAT IS USED TO DO THIS IS STILL VISIBLE AFTER APPLICATION AND TENDS TO DETRACT FROM THE FINISHED JOB. EXTRA WORK AND CARE IN APPLICATION IS REQUIRED, BUT THE END RESULT IS FAR MORE PROFESSIONAL AND APPEALING TO THE EYE. REFER TO THE MARKINGS PLACEMENT SHEET FOR POSITIONING THE DECALS ON YOUR MODEL.

Application Instructions

1. PLAN LAYOUT OF DECALS ON MODEL.

2. IF LAYING OUT NUMBERS, MASKING TAPE MAKES A HELPFUL REFERENCE BORDER FOR OBTAINING A STRAIGHT BOTTOM LINE. MARK POSITION OF THE NUMBERS ON THE TAPE BEFORE LIFTING THE DECAL IN WATER. REMOVE THE TAPE ONCE YOU HAVE REACHED THE SQUEEGEE PORTION OF THE INSTRUCTIONS.

3. CUT SHEET INTO CONVENIENT APPLICATION-ORIENTED SECTIONS.

4. MAKE SURE SURFACE OF THE MODEL IS CLEAN AND FREE OF DIRT OR GREASE.

5. DIP DECAL SECTION YOU INTEND TO APPLY INTO LUKE WARM WATER. HOLD IT THERE UNTIL DECAL BEGINS TO LOOSEN FROM PAPER BACKING (USUALLY 20-30 SECONDS). REMOVE FROM WATER WHEN DECAL CAN BE SLID FREELY BACK AND FORTH ON ITS PAPER BACKING.

6. AFTER REMOVING FROM WATER, ALLOW TO STAND MOMENTARILY. MEANWHILE, MOISTEN AREA OF MODEL WHICH IS TO RECEIVE DECAL WITH LUKE WARM WATER. MAKE SURE SURFACE

TO RECEIVE DECAL IS NEAR ROOM TEMPERATURE AND NOT EXCEEDINGLY COLD.

7. PLACE SOAKED PAPER BACKING WITH DECAL STILL IN PLACE IN APPROXIMATE POSITION ON MODEL AND THEN SLIDE DECAL, FACE UP, FROM BACKING INTO POSITION ON MODEL. BE CAREFUL NOT TO TEAR NUMBERS.

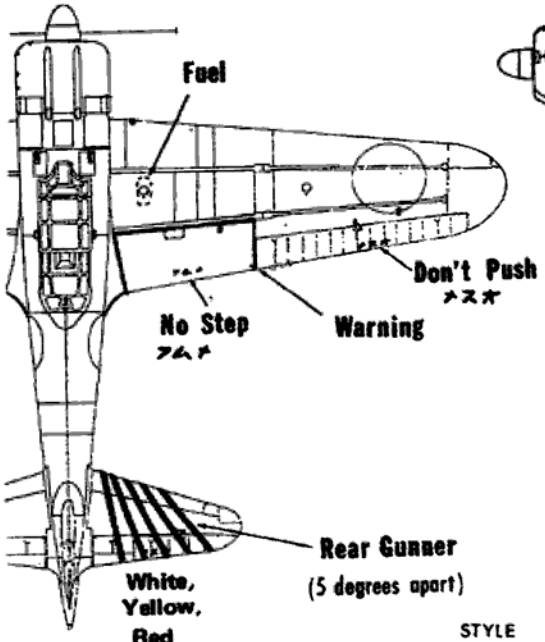
8. DO NOT TOUCH THE SIDE OF DECAL WHICH WILL ADHERE TO THE MODEL.

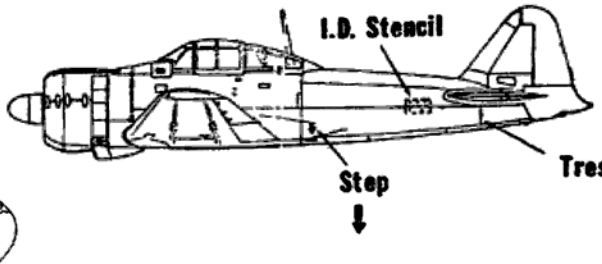
9. ONCE IN DESIREO POSITION, GENTLY SMOOTH OUT WRINKLES OR BUBBLES WITH A CREDIT CARD OR RUBBER SQUEEGEE. DECAL SHOULD REST FLUSH WITH SURFACE AND ALL AIRBUBBLES, ETC. SQUEEGEED OUT FROM BENEATH.

10. ALLOW APPLIED DECALS TO DRY OVERNIGHT BEFORE PAINTING MODEL WITH CLEAR COAT.

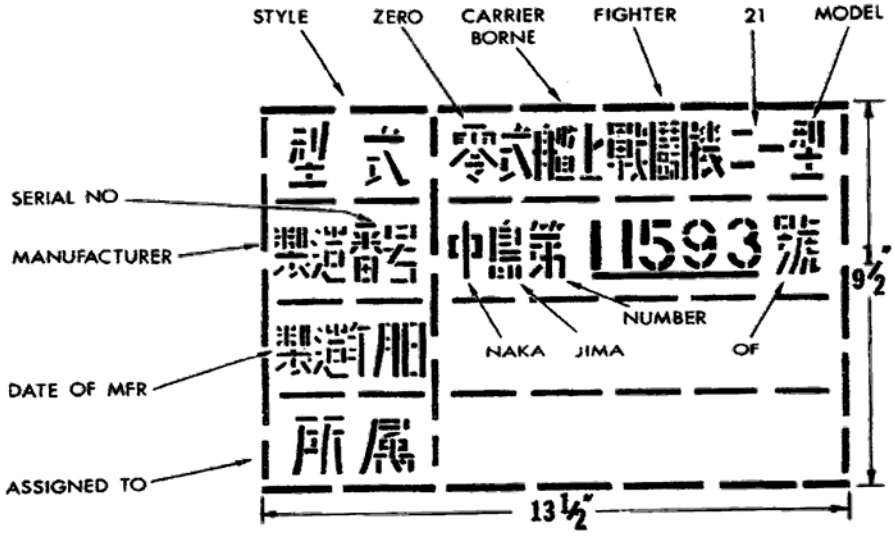
11. DECALS FURNISHED WITH MILITARY MODELS HAVE A SPECIAL FLAT FINISH. ALTHOUGH IMPERVIOUS TO CLEAR MODEL AIRPLANE DOPE, IT WILL TEND TO "BEAD-UP" AND NOT ADHERE PROPERLY TO THE DECAL SURFACE. FOR THIS REASON, WE RECOMMEND THE USE OF A FLAT POLYURETHANE CLEAR COAT TO ENTIRE MODEL (DECALS AND ALL) TO PRODUCE A CONSISTENT MATTE FINISH. GLOSS DECALS MAY BE SPRAYED WITH CLEAR DOPE.

A6M3 ZERO STENCIL LETTERING GUIDE





NOTE:
Stencil lettering found on decal sheet but not shown here is for general use only.

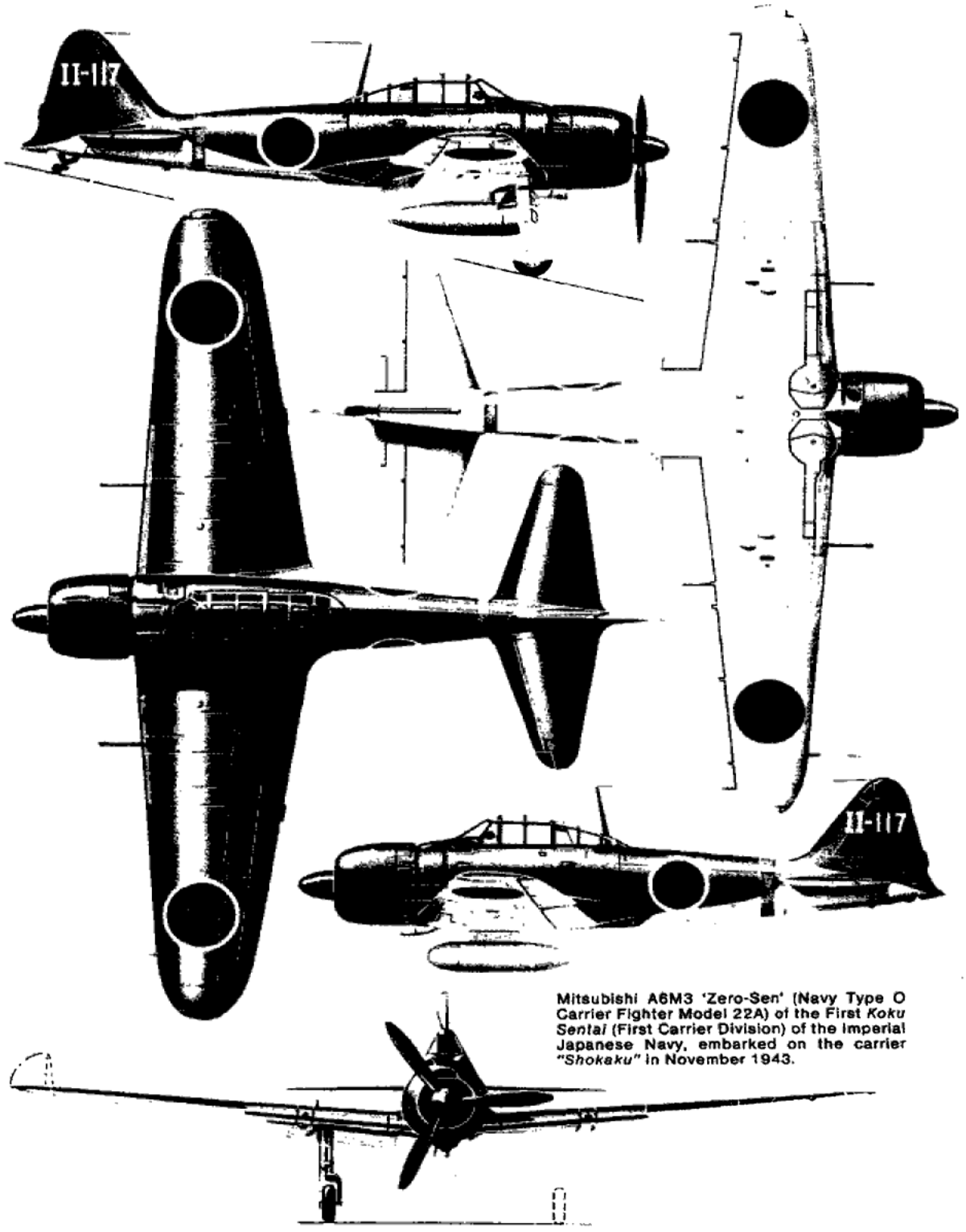


TYPICAL I D STENCIL

Model 32 A6M3
of the 6th Kokutai;
Ballale, Solomon Islands,
October 1943.

USE ALL RED INSIGNIAS ON
BOTH WING TOP AND BOTTOM
AND ON FUSE SIDES

DECAL PLACEMENT FOR A6M3 ZERO



Mitsubishi A6M3 'Zero-Sen' (Navy Type O Carrier Fighter Model 22A) of the First *Koku Sentai* (First Carrier Division) of the Imperial Japanese Navy, embarked on the carrier *"Shokaku"* in November 1943.