



Tales of the Resolution!

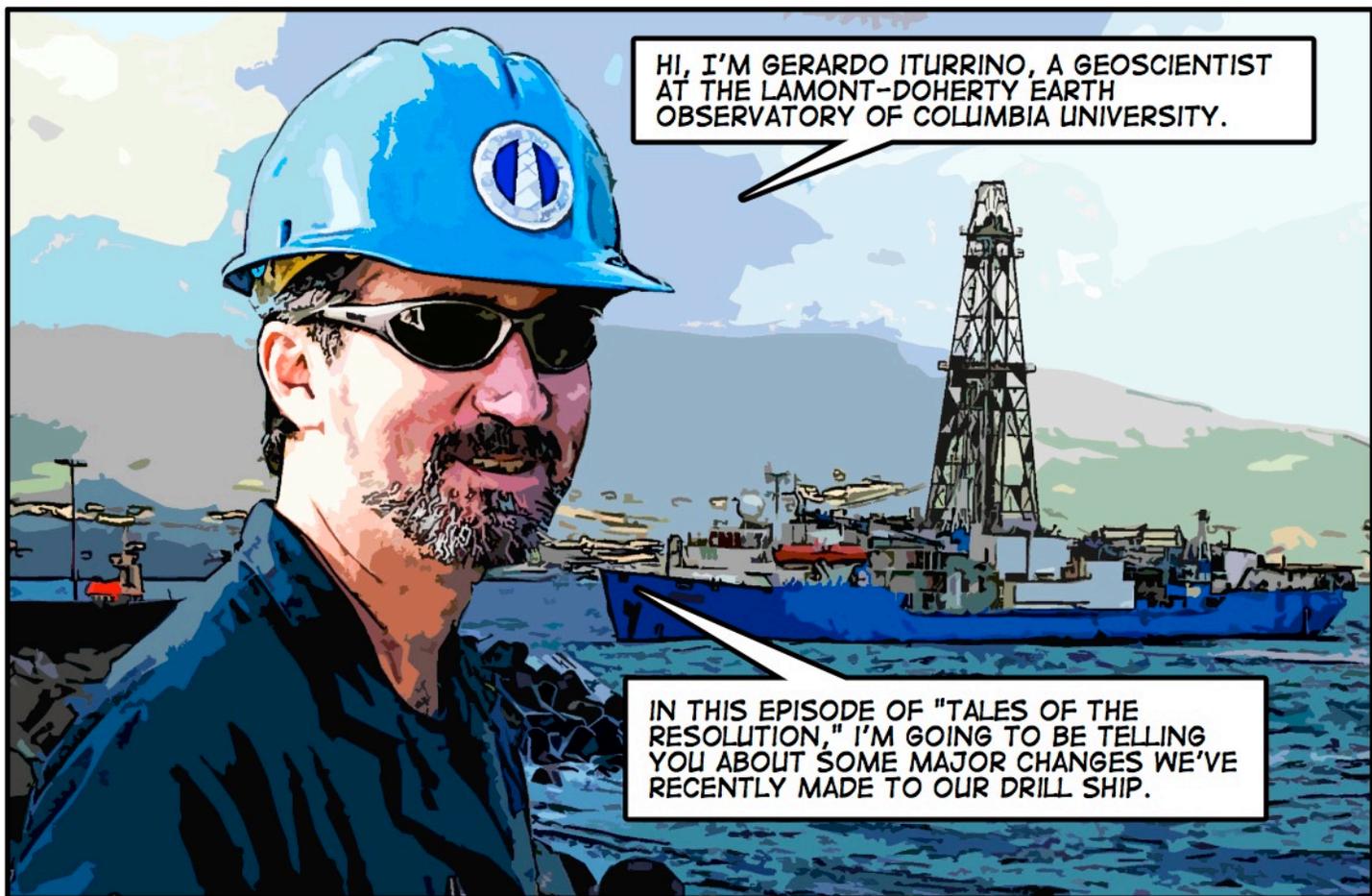
EPISODE 2:

RE-FIT MADNESS

VOL. I, NUMBER 2
FEBRUARY 2009

*FOLLOW THE CONTINUING ADVENTURES OF
THE JOIDES RESOLUTION AT:*

WWW.LDEO.COLUMBIA.EDU/BRG/TALES



HI, I'M GERARDO ITURRINO, A GEOSCIENTIST AT THE LAMONT-DOHERTY EARTH OBSERVATORY OF COLUMBIA UNIVERSITY.

IN THIS EPISODE OF "TALES OF THE RESOLUTION," I'M GOING TO BE TELLING YOU ABOUT SOME MAJOR CHANGES WE'VE RECENTLY MADE TO OUR DRILL SHIP.



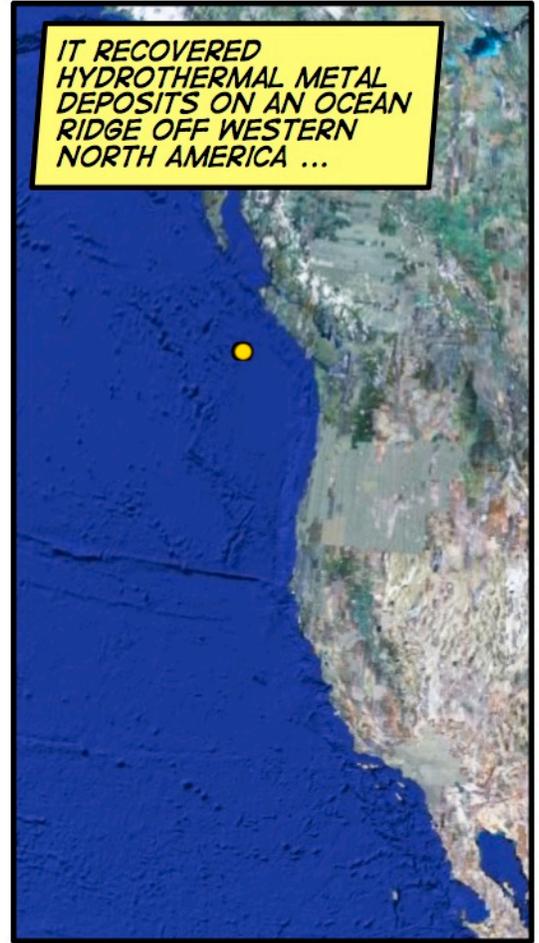
BUT FIRST, A LITTLE BACKGROUND ...

FOR MORE THAN 20 YEARS, THE JOIDES RESOLUTION HAS SAILED THE WORLD AND HELPED SCIENTISTS RECOVER SAMPLES OF SEDIMENT AND ROCK FROM THE OCEAN FLOOR.

DURING THIS PERIOD, IT HAS ENABLED EARTH SCIENTISTS TO MAKE IMPORTANT DISCOVERIES - FOR EXAMPLE, THAT A PERMANENT ICE SHEET FORMED ON WEST ANTARCTICA 5 MILLION YEARS AGO.



IT RECOVERED HYDROTHERMAL METAL DEPOSITS ON AN OCEAN RIDGE OFF WESTERN NORTH AMERICA ...



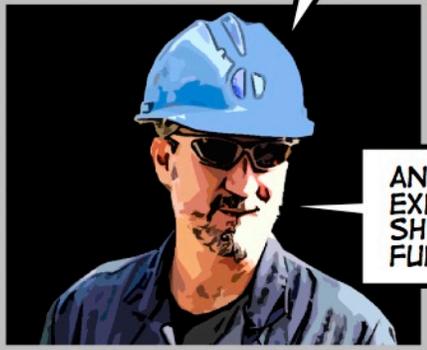
... DISCOVERED LIVE BACTERIA 800 METERS BELOW THE SEAFLOOR OFF NEW GUINEA ...



... AND FOUND EVIDENCE IN OCEAN SEDIMENTS OFF FLORIDA THAT A GIANT METEORITE STRUCK THE EARTH 65 MILLION YEARS AGO, PROBABLY WIPING OUT THE DINOSAURS.



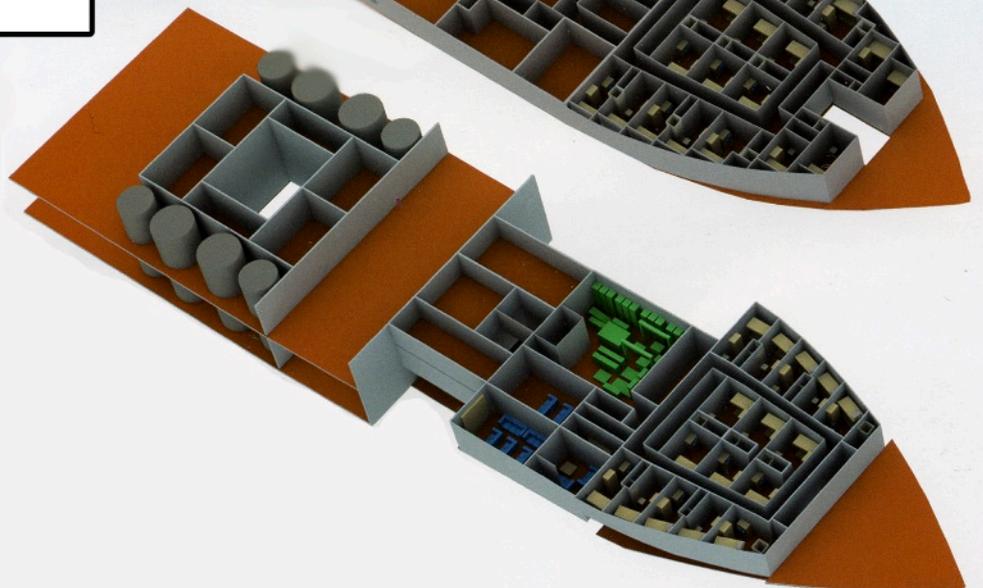
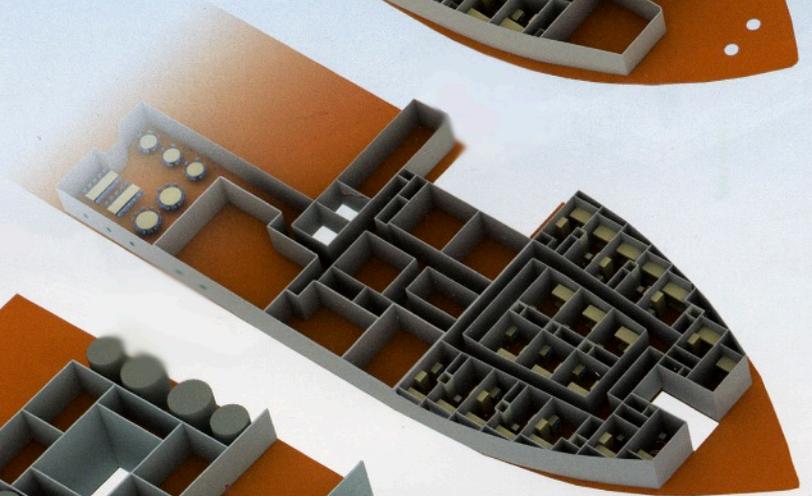
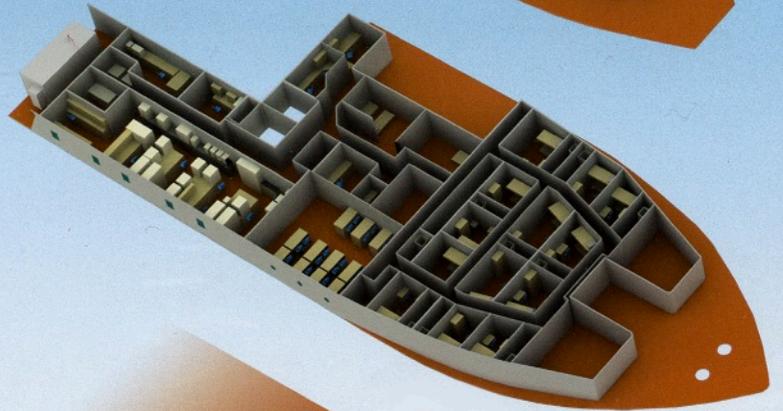
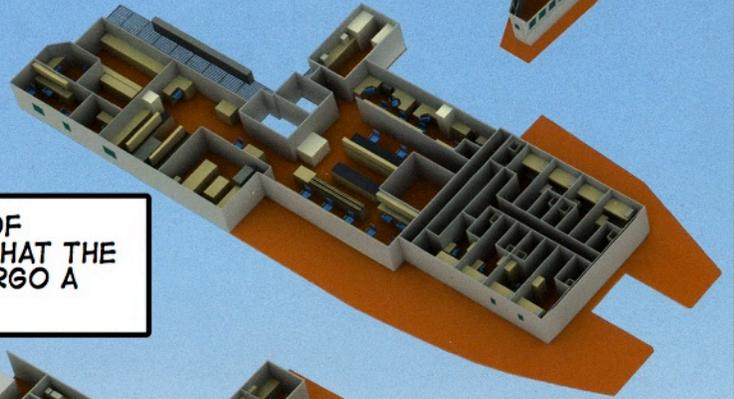
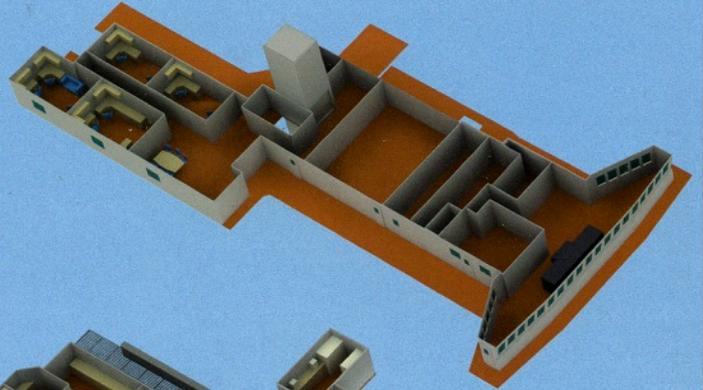
BUT EVEN WITH ALL THESE AMAZING AND HISTORIC ACCOMPLISHMENTS, SCIENTISTS CONCLUDED SEVERAL YEARS AGO THAT THE RESOLUTION HAD TO BE UPGRADED IN ORDER TO KEEP PACE WITH THE ADVANCED RESEARCH BEING PROPOSED FOR FUTURE EXPEDITIONS.



AND SO, A GROUP OF EXPERTS DECIDED THAT THE SHIP SHOULD UNDERGO A FULL RENOVATION.

SCIENTISTS AND ENGINEERS BEGAN TO DISCUSS WHAT CAPABILITIES WOULD BE NEEDED FOR THE NEXT PHASE OF OCEAN DRILLING ...

... AND TO IMAGINE HOW THE SHIPBOARD LABORATORIES AND QUARTERS SHOULD BE DESIGNED.



FINALLY, PLANS WERE DRAWN UP AND A CONTRACT WAS SIGNED WITH A SHIPYARD IN SINGAPORE TO PERFORM THE RENOVATION. THE JOIDES RESOLUTION WAS ABOUT TO BE REBORN!

IT'S PROBABLY A GOOD IDEA AT THIS POINT FOR YOU TO ACQUAINT YOURSELF WITH THE DRILL SHIP'S MAIN STRUCTURES, SO YOU CAN BETTER UNDERSTAND THE CHANGES THAT WERE MADE. HERE IS A PICTURE OF THE RESOLUTION BEFORE RENOVATION.

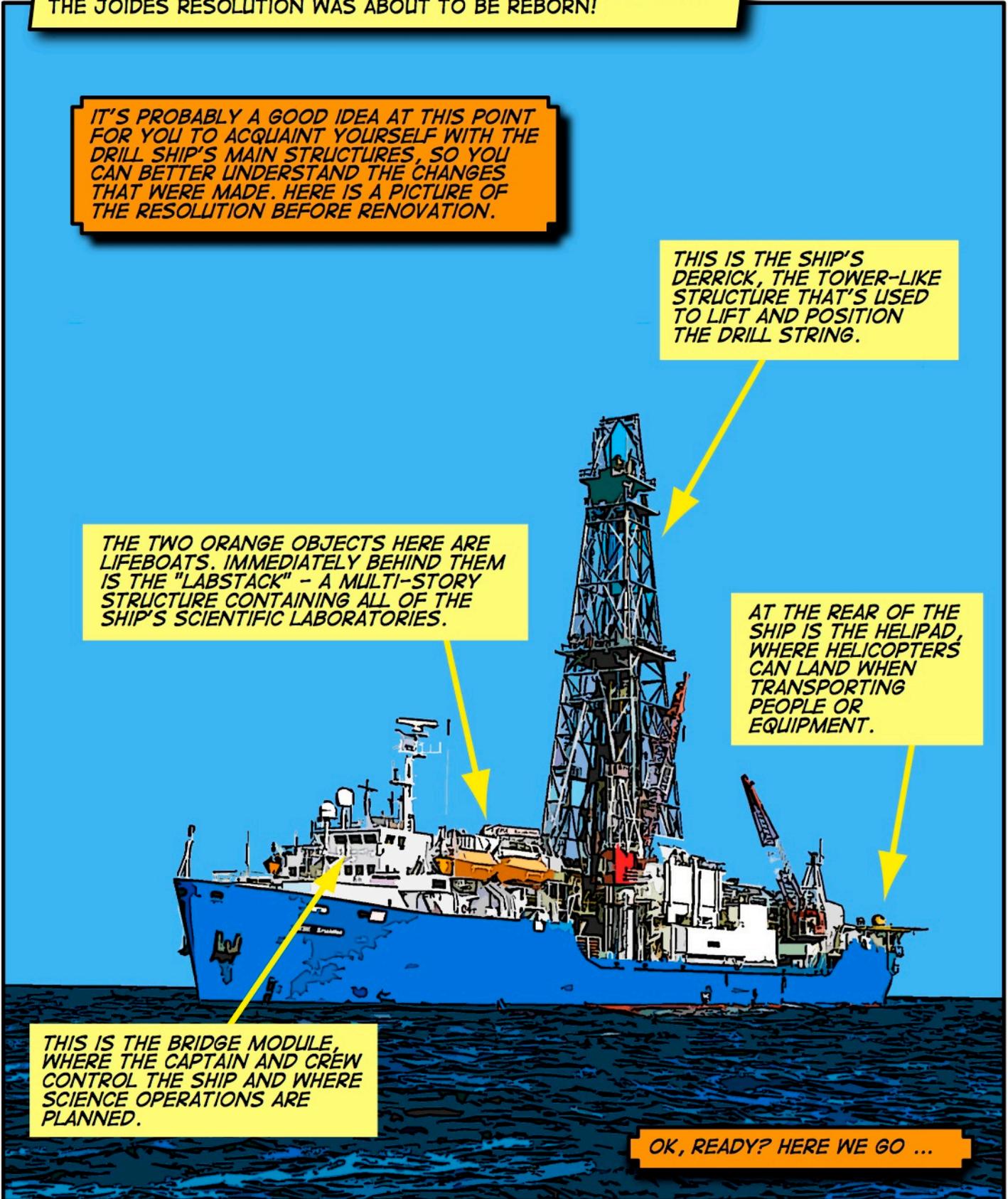
THIS IS THE SHIP'S DERRICK, THE TOWER-LIKE STRUCTURE THAT'S USED TO LIFT AND POSITION THE DRILL STRING.

THE TWO ORANGE OBJECTS HERE ARE LIFEBOATS. IMMEDIATELY BEHIND THEM IS THE "LABSTACK" - A MULTI-STORY STRUCTURE CONTAINING ALL OF THE SHIP'S SCIENTIFIC LABORATORIES.

AT THE REAR OF THE SHIP IS THE HELIPAD, WHERE HELICOPTERS CAN LAND WHEN TRANSPORTING PEOPLE OR EQUIPMENT.

THIS IS THE BRIDGE MODULE, WHERE THE CAPTAIN AND CREW CONTROL THE SHIP AND WHERE SCIENCE OPERATIONS ARE PLANNED.

OK, READY? HERE WE GO ...



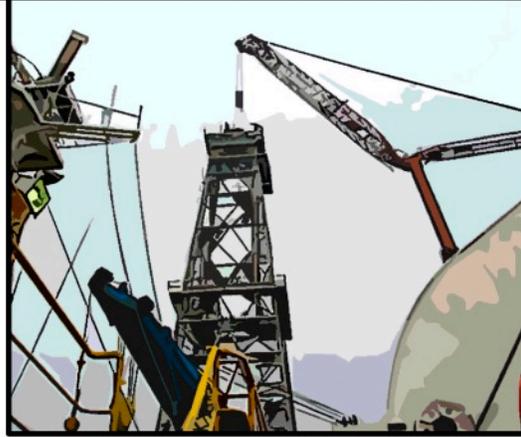
EACH MORNING, HUNDREDS OF WORKERS WOULD ASSEMBLE IN THE SHIPYARD BEFORE STARTING THE DAY'S PROJECTS.



DAILY PLANNING TOOK PLACE IN AN OFFICE THAT WAS DUBBED "THE WAR ROOM."



ONE OF THE FIRST STEPS WAS TO REMOVE THE SHIP'S DERRICK FOR REFURBISHING.



WITHOUT THE DERRICK, THE SHIP WAS ALMOST UNRECOGNIZABLE!



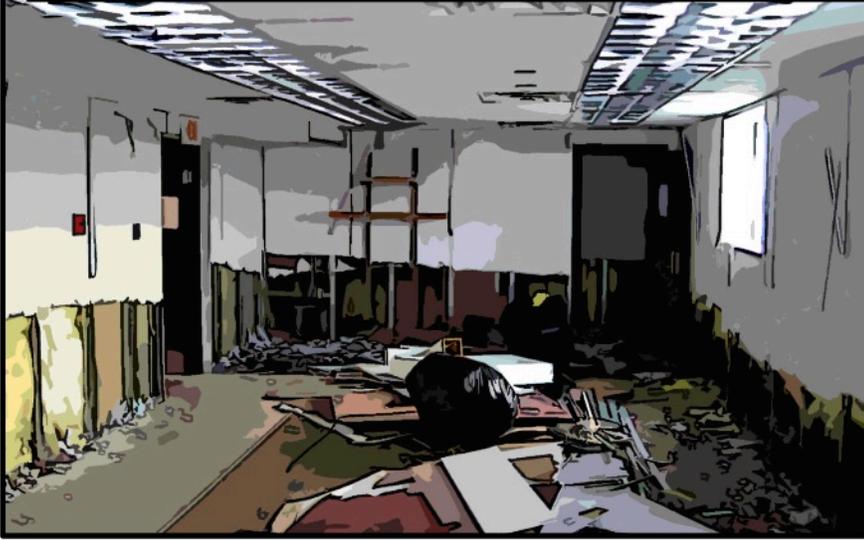
FUN FACT: THE JOIDES RESOLUTION IS LONGER THAN A FOOTBALL FIELD!



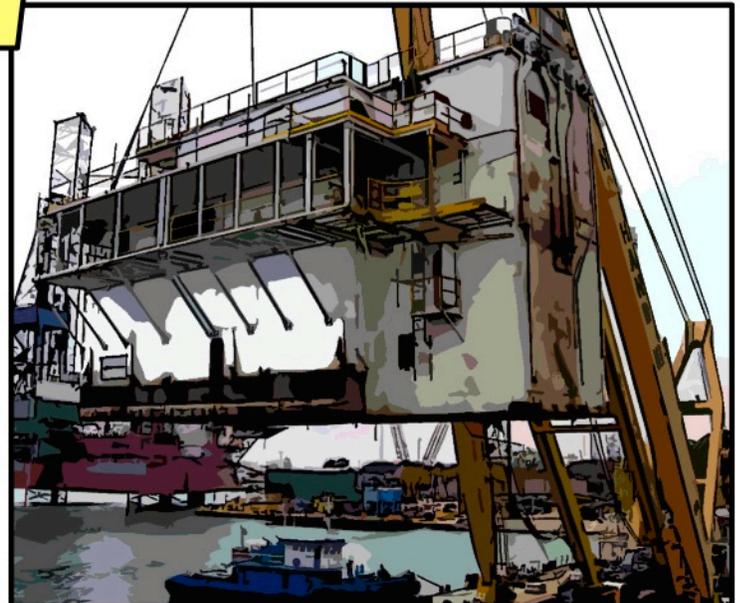
IN THIS SHOT, YOU CAN SEE THE DERRICK ON SHORE, SURROUNDED BY SCAFFOLDING.



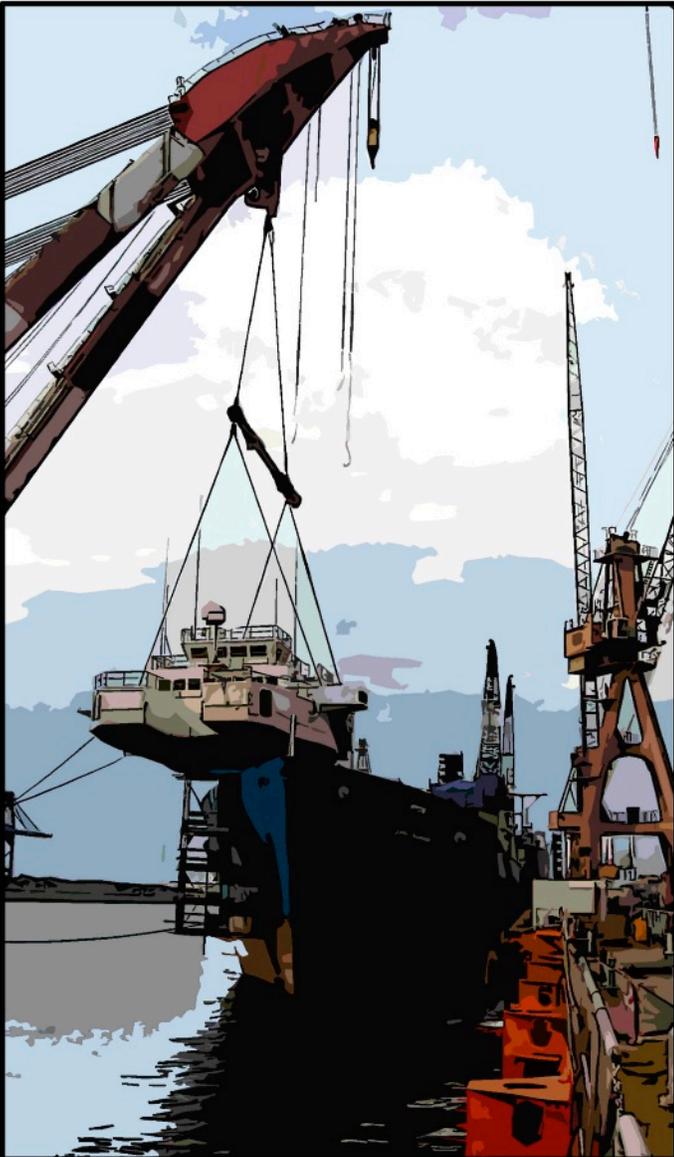
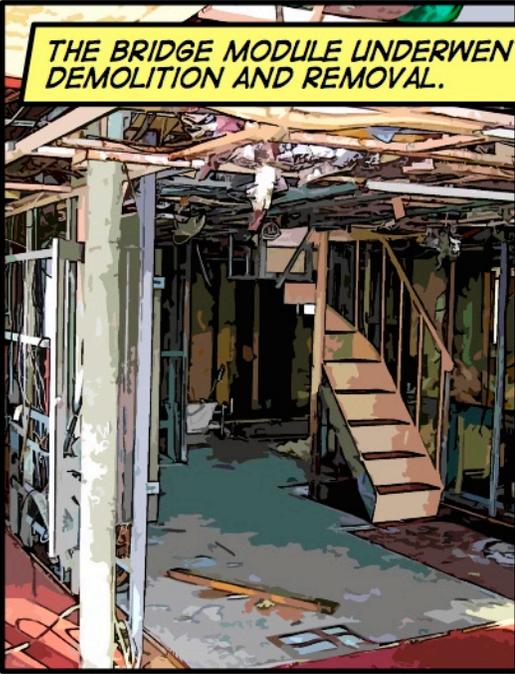
**NEXT CAME ONE OF THE REALLY FUN PARTS: DEMOLITION!
THE LABS HAD TO BE DESTROYED AND EMPTIED IN
PREPARATION FOR REMOVING THEM FROM THE SHIP ENTIRELY.**



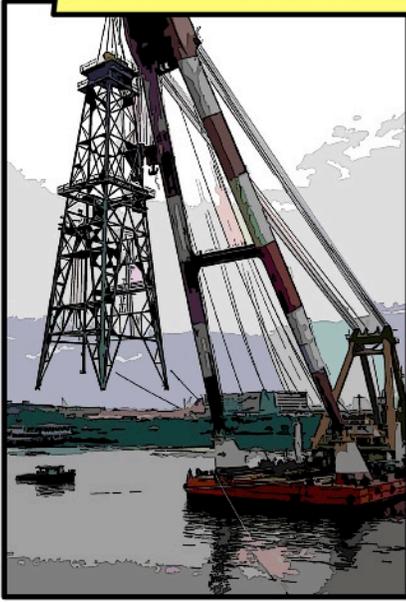
**THE LABSTACK WAS THEN SEPARATED FROM
THE SHIP AND AN ENORMOUS CRANE WAS
USED TO LIFT IT OFF.**



THE BRIDGE MODULE UNDERWENT THE SAME FATE:
DEMOLITION AND REMOVAL.



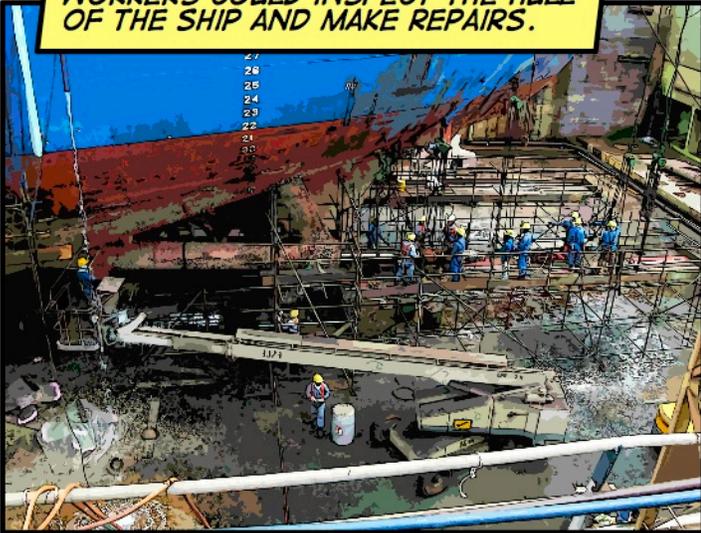
THE REFURBISHED DERRICK WAS THEN TRANSPORTED BACK TO THE SHIP AND REATTACHED.



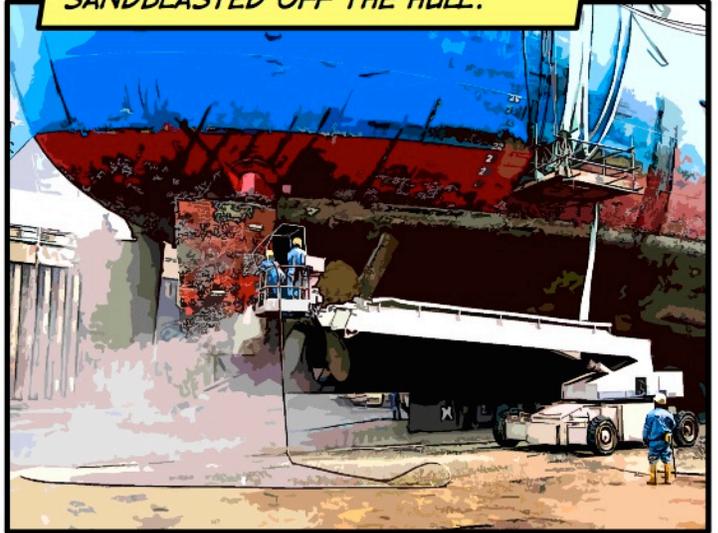
NEXT, THE RESOLUTION WAS TOWED INTO WHAT'S CALLED "DRYDOCK." A MAN-MADE BASIN WAS ARTIFICIALLY FLOODED, THE SHIP WAS STEERED IN, AND THE WATER WAS THEN DRAINED AWAY.



WITH THE WATER GONE, THE WORKERS COULD INSPECT THE HULL OF THE SHIP AND MAKE REPAIRS.



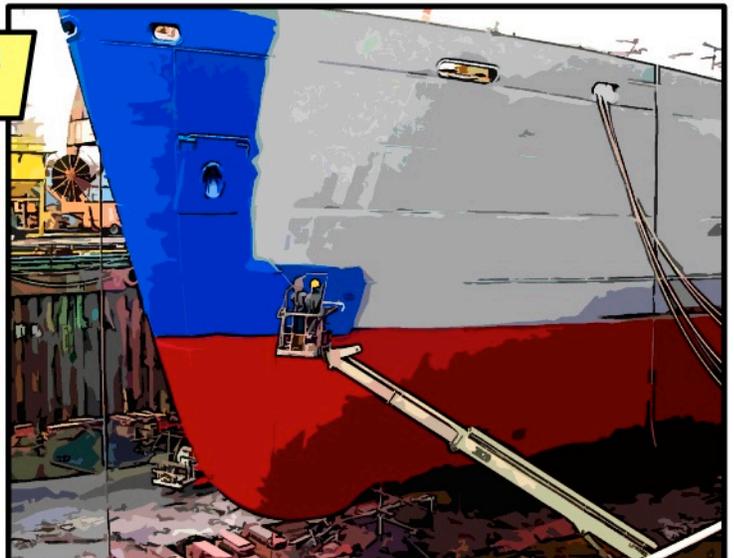
YEARS' WORTH OF DETRITUS WAS SANDBLASTED OFF THE HULL.



THE SHIP'S PROPELLERS WERE TRANSPORTED TO SHORE AND THOROUGHLY CLEANED.



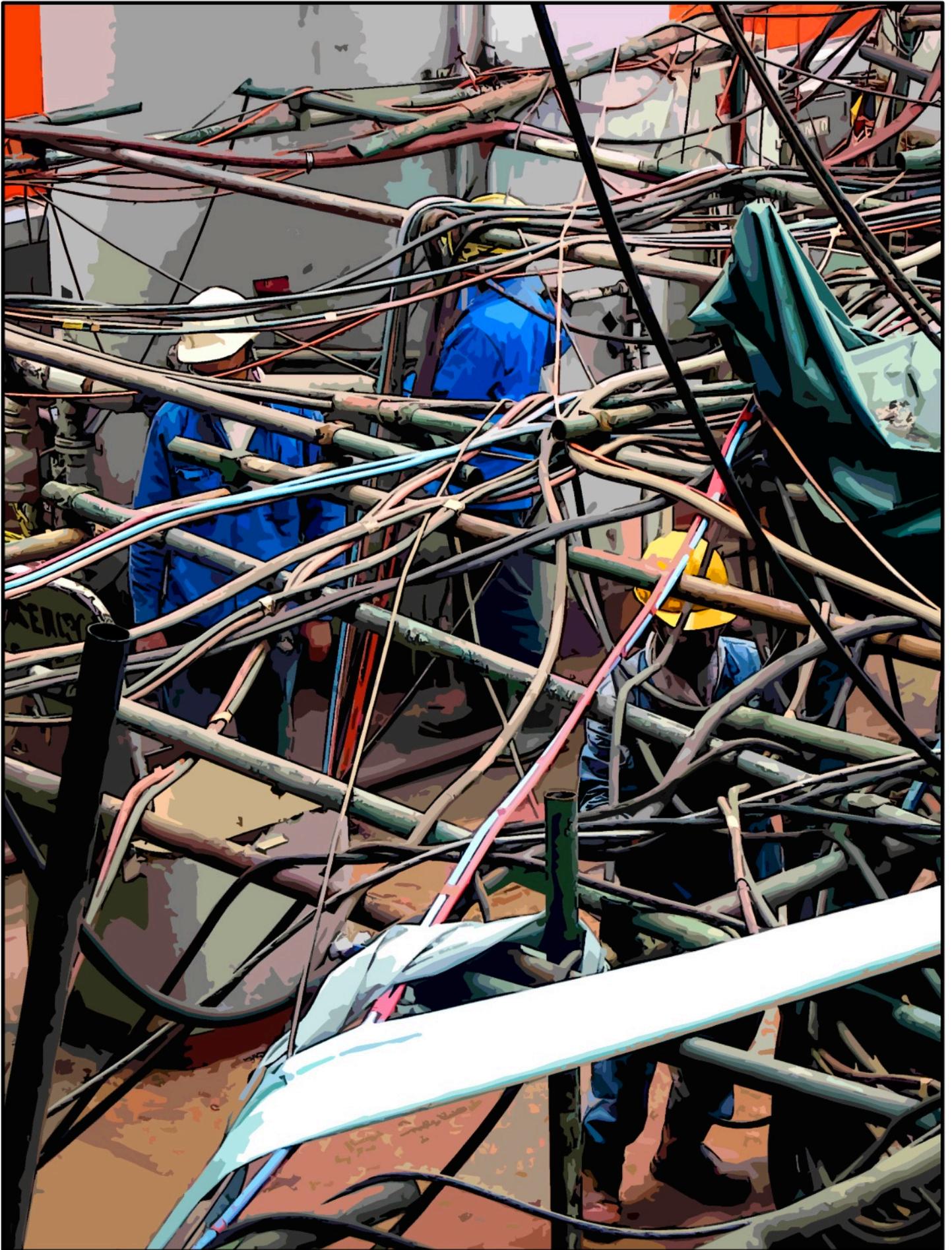
THEN IT WAS TIME FOR A NEW PAINT JOB.





ON BOARD, SHIPYARD WORKERS BEGAN CONSTRUCTING NEW ACCOMMODATIONS QUARTERS BELOW THE MAIN DECK LEVEL.





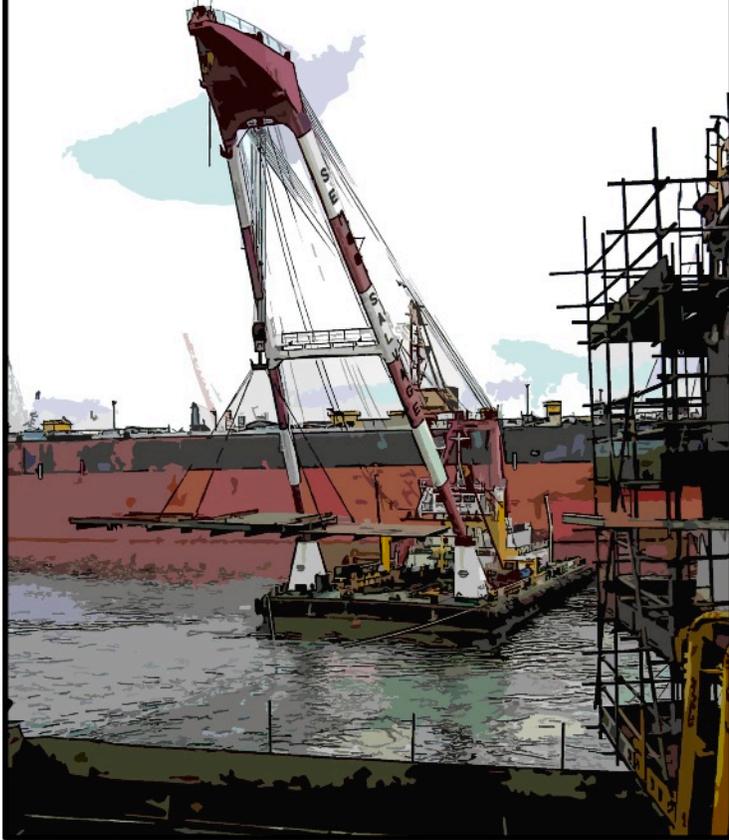
MEANWHILE, ACROSS THE STRAIT FROM SINGAPORE, BRAND NEW BRIDGE AND LAB MODULES WERE BEING CONSTRUCTED FROM SCRATCH ...



NEW SUPPLIES ARRIVED ON AN ALMOST DAILY BASIS.



A NEW DECK, ALSO BUILT FROM SCRATCH, WAS TRANSPORTED IN SECTIONS TO THE SHIP AND INSTALLED.



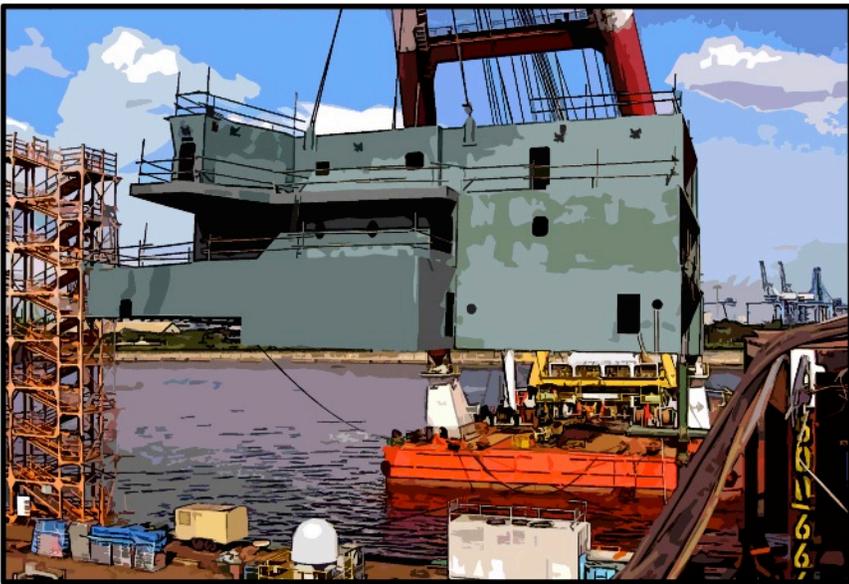
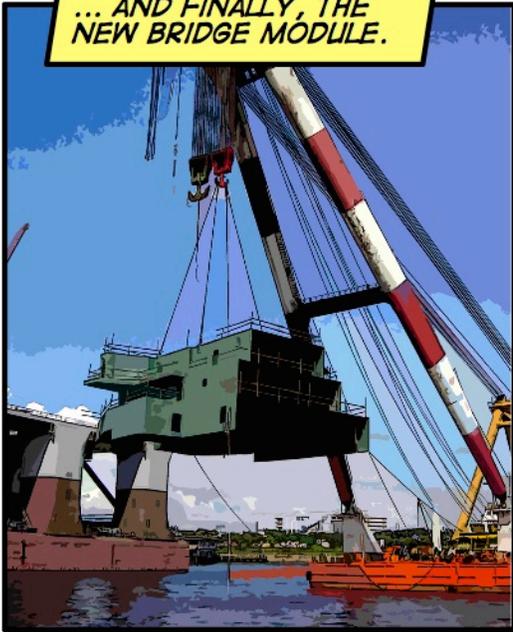
THEN, THE FIRST LEVEL OF THE NEW LAB MODULES ...



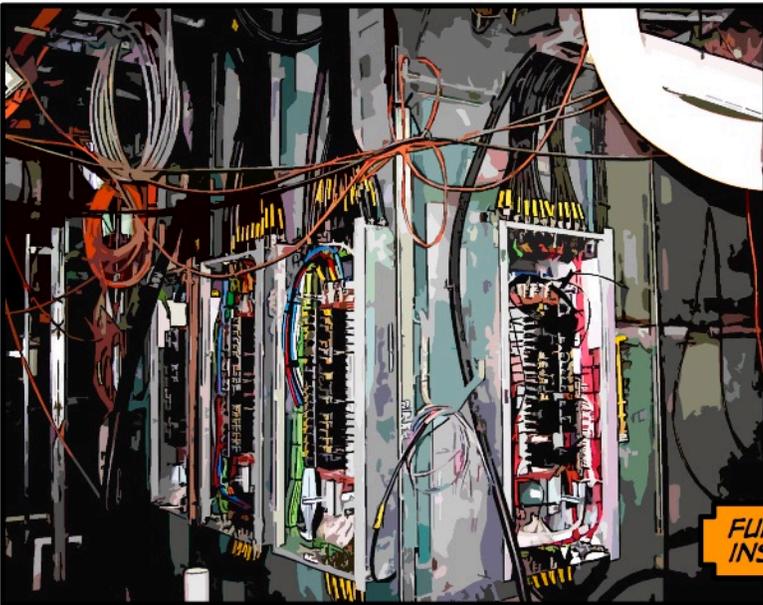
... AND THEN ADDITIONAL
LAB MODULE LEVELS ...



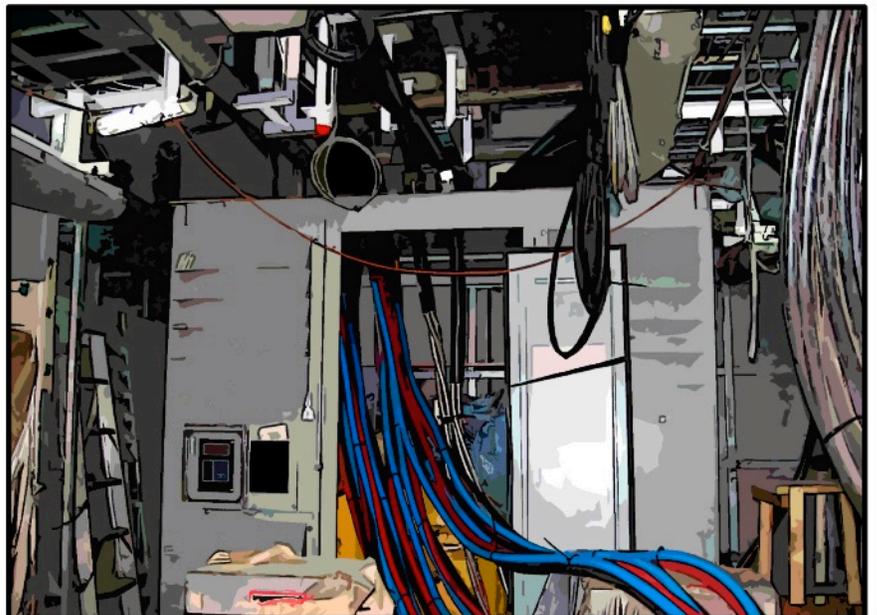
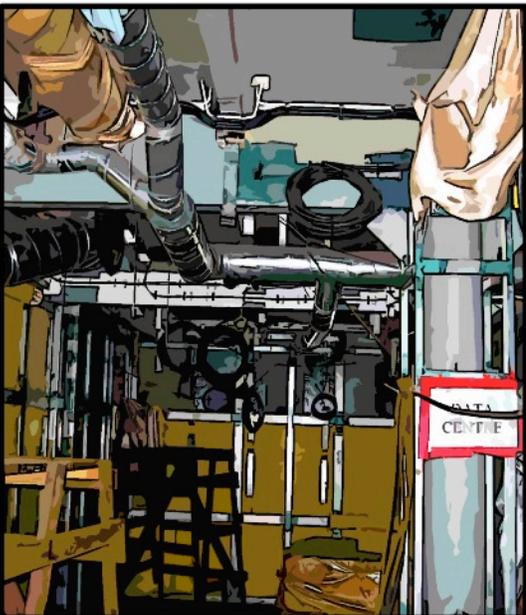
... AND FINALLY, THE
NEW BRIDGE MODULE.



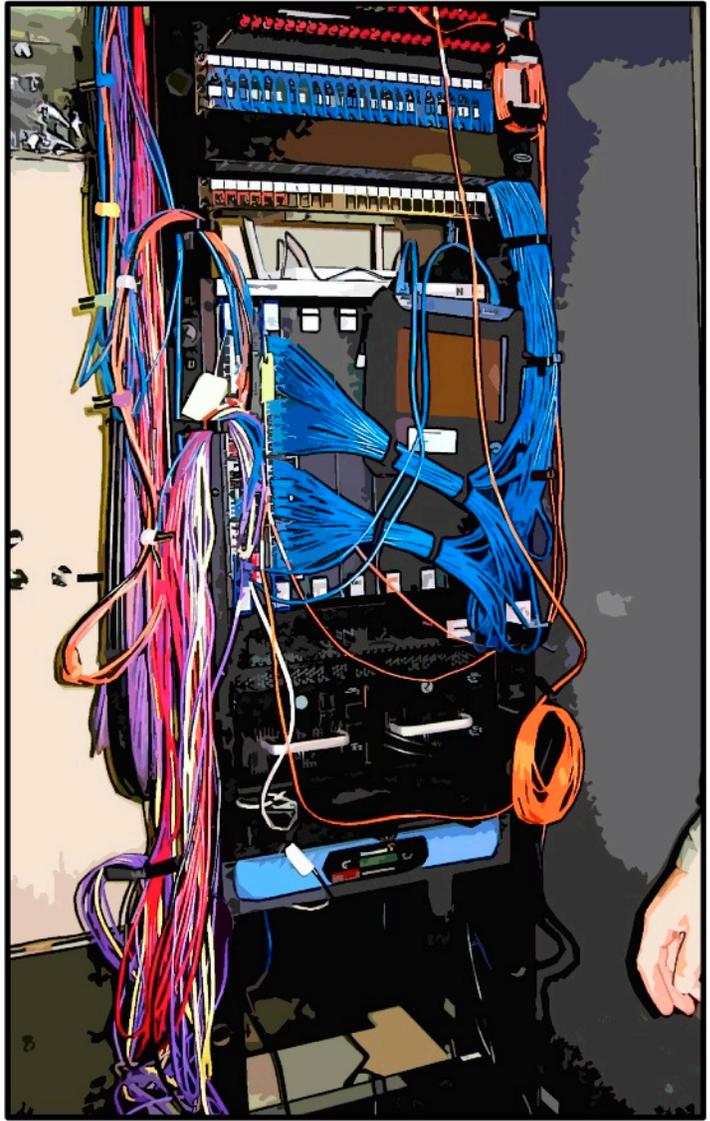
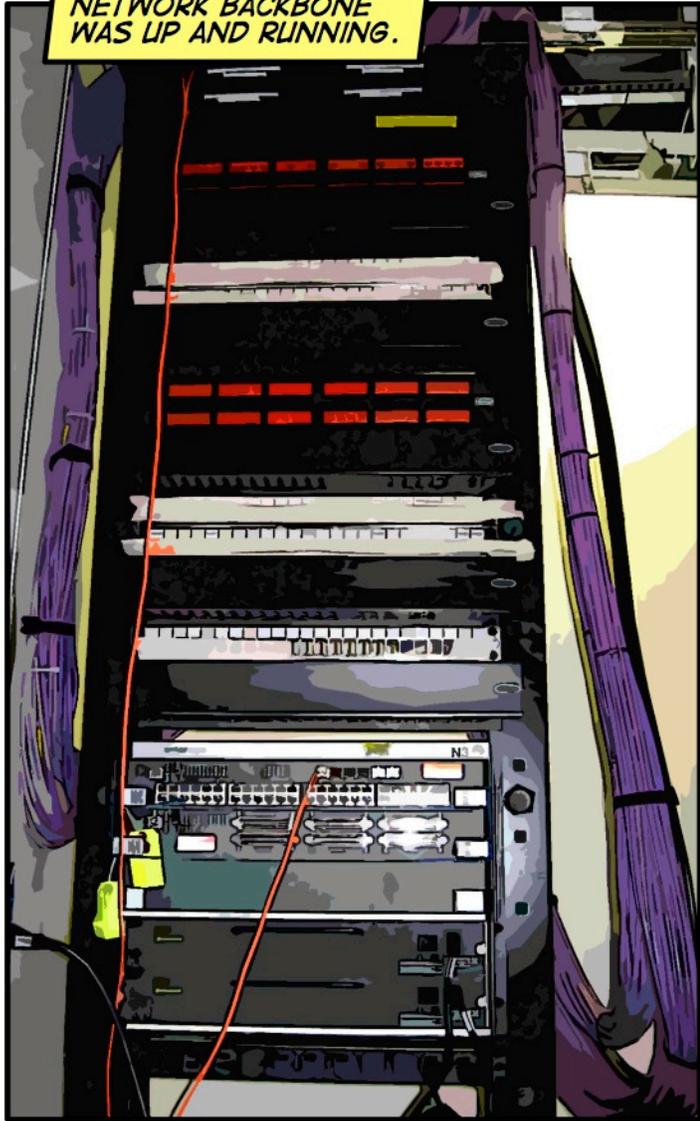
WITH THE MAIN STRUCTURES NOW IN PLACE, IT WAS TIME TO START INSTALLING ALL THE ELECTRICAL AND COMPUTER NETWORK CABLES.



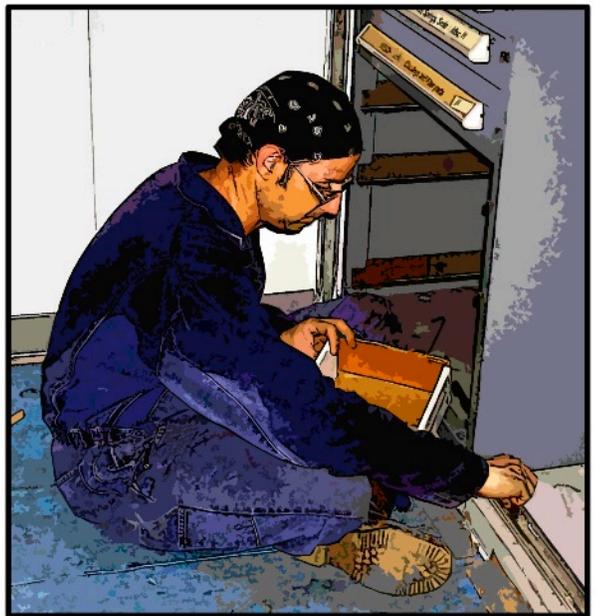
FUN FACT: ABOUT 150 MILES OF CABLE WAS INSTALLED ON THE JOIDES RESOLUTION!



SOON THE COMPUTER NETWORK BACKBONE WAS UP AND RUNNING.



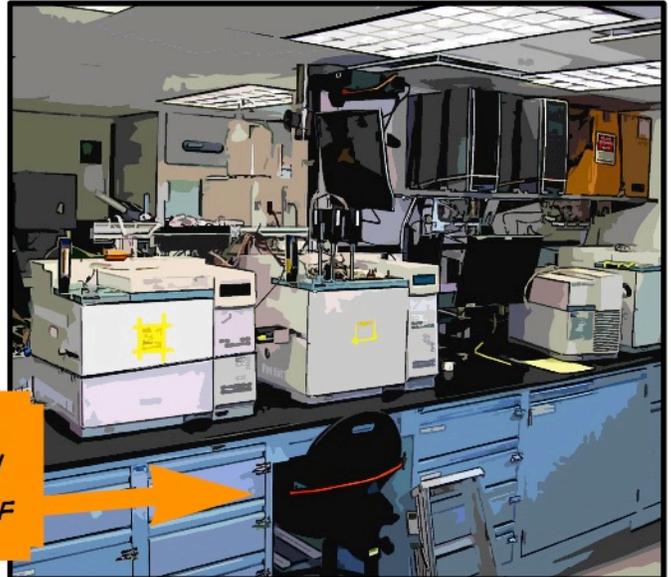
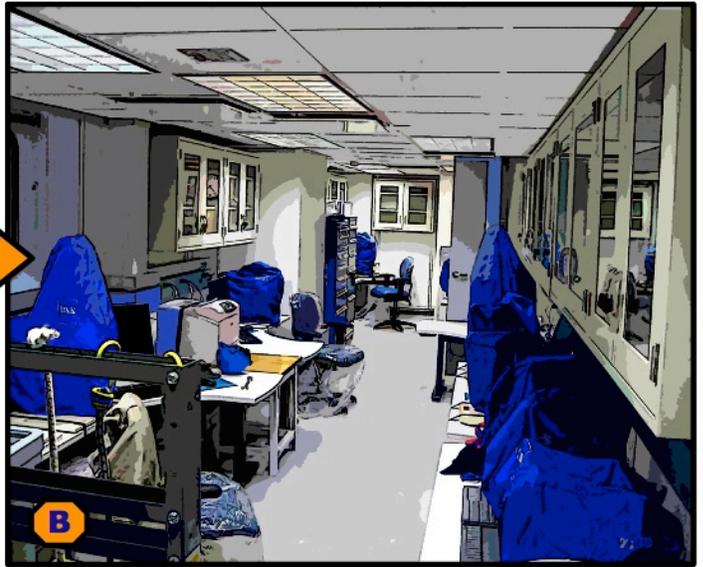
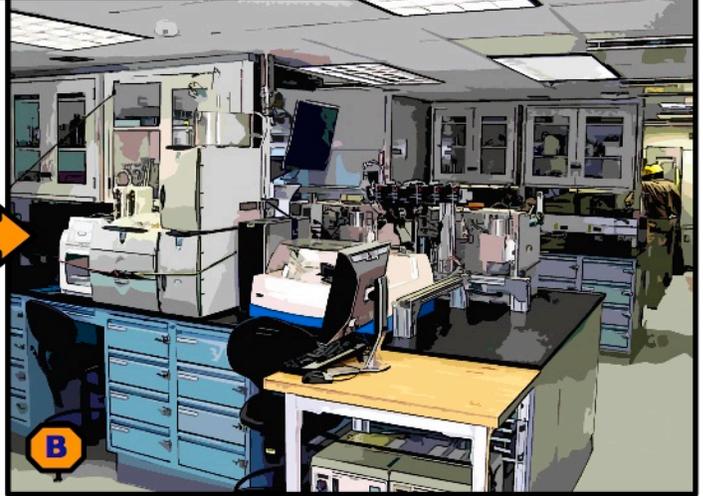
CONSTRUCTION WITHIN THE BRIDGE AND LAB MODULES PROCEEDED AT A FURIOUS PACE ...



... AND IT WASN'T LONG BEFORE THE LABS STARTED TO TAKE SHAPE.

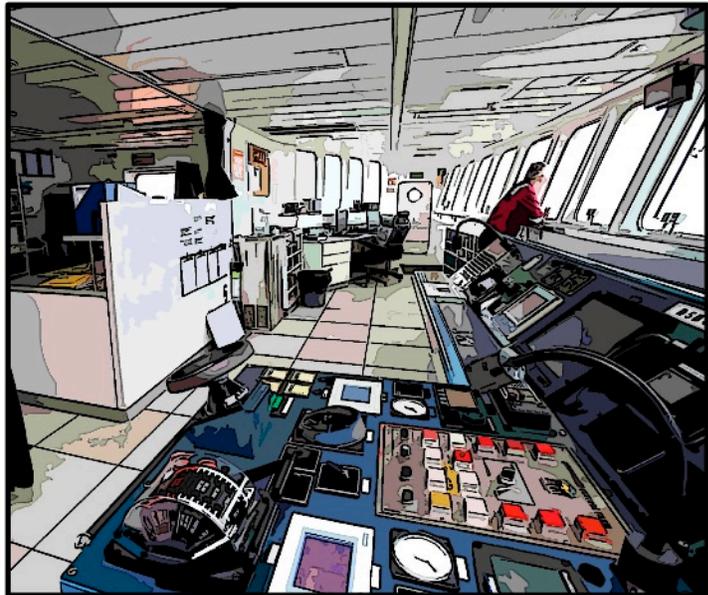
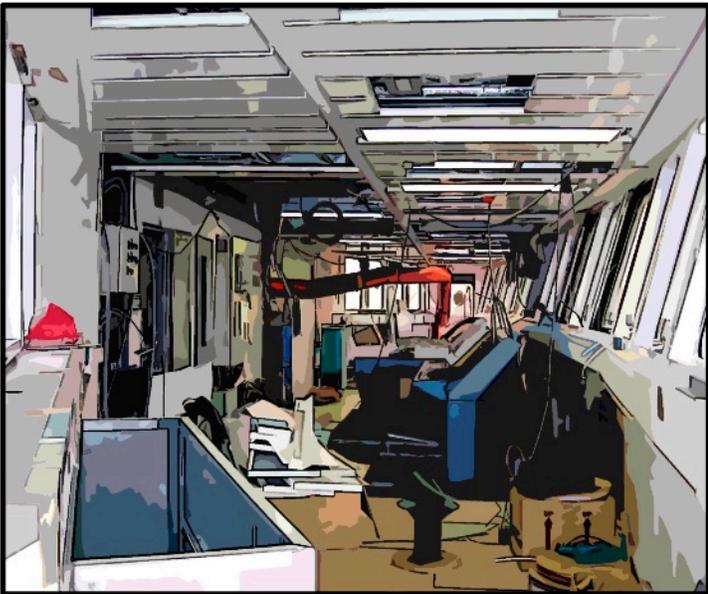


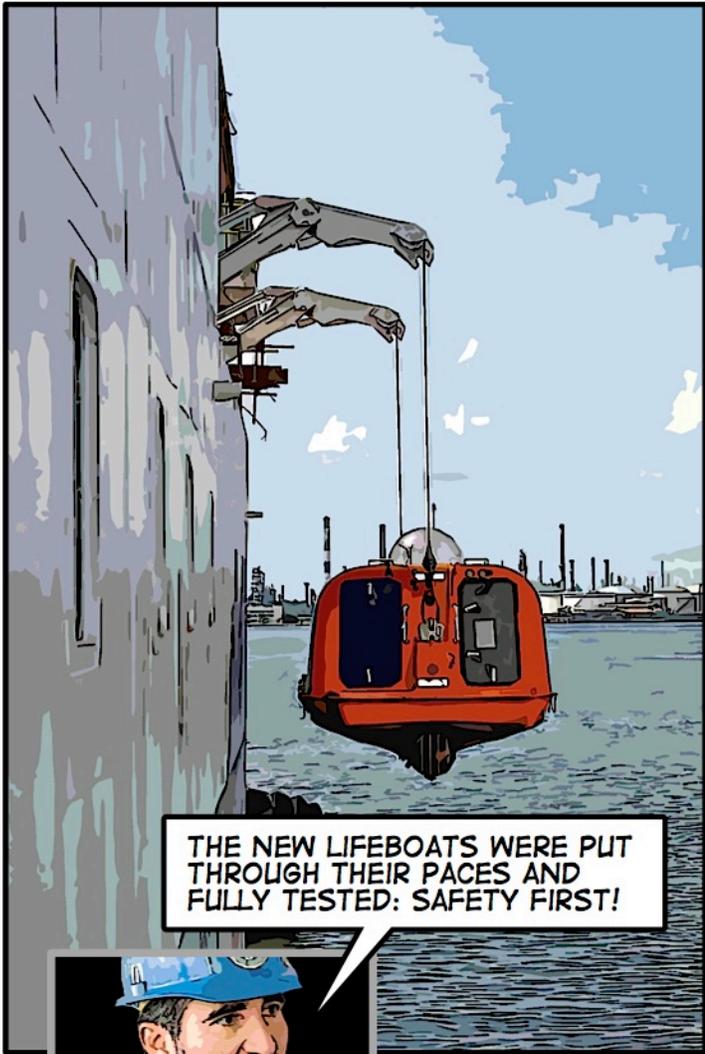
ONCE CONSTRUCTION PASSED A CERTAIN POINT, IT WAS TIME TO START BRINGING IN THE FURNITURE AND LAB EQUIPMENT. YOU CAN SEE THE PROGRESS IN THE TWO PAIRS OF PICTURES BELOW, WHICH WERE TAKEN ONLY A FEW WEEKS APART.



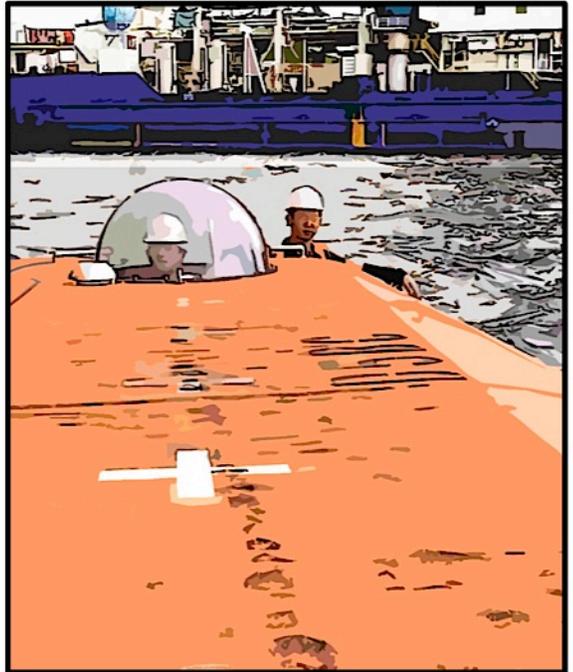
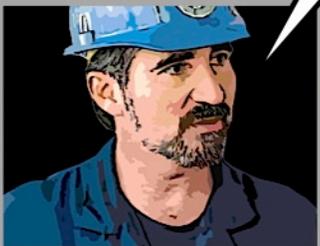
FUN FACT: ALL CHAIRS AND CABINET DOORS ON THE JOIDES RESOLUTION HAVE STRAPS TO KEEP THEM SECURE IN CASE OF ROUGH SEAS!

OVER A PERIOD OF ABOUT FIVE MONTHS, THE RESOLUTION'S BRIDGE WENT FROM CHAOS TO COMPLETION.

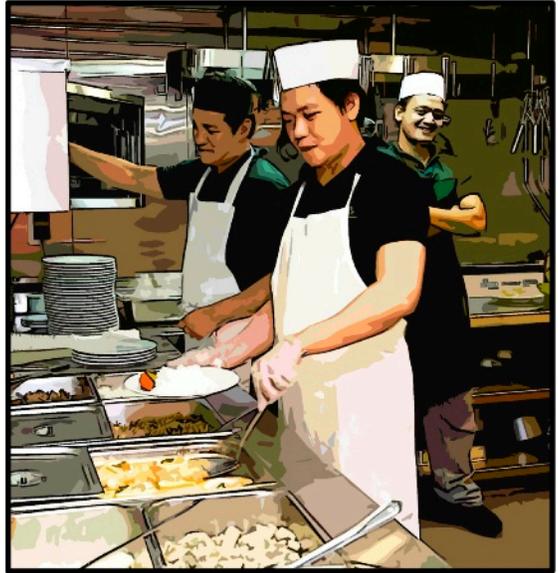




THE NEW LIFEBOATS WERE PUT THROUGH THEIR PACES AND FULLY TESTED: SAFETY FIRST!



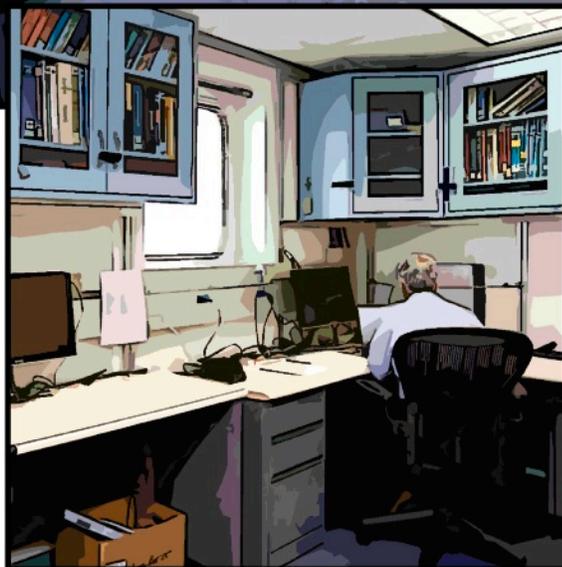
THE NEW GALLEY AND MESS HALL WERE READY TO GO BY THE END OF 2008 ...



... AND NEW EQUIPMENT WAS BROUGHT IN FOR THE SHIP'S GYM.



IN A FINAL MAD DASH TO THE FINISH LINE, CONSTRUCTION ON THE RESOLUTION'S LABS AND OFFICES WAS COMPLETED IN JANUARY 2009.



THE MODERNIZATION OF THE JOIDES RESOLUTION WAS AN ENORMOUS UNDERTAKING, REQUIRING YEARS OF PLANNING AND EXECUTION. MORE THAN 4 MILLION MAN HOURS WERE NEEDED TO DESIGN AND COMPLETE THE RENOVATION.

YET EVEN NOW, WORK REMAINS TO BE PERFORMED BEFORE THE VESSEL IS DEEMED READY FOR SCIENTIFIC OPERATIONS. ITS EQUIPMENT AND INFRASTRUCTURE MUST BE TESTED, AND ITS SEAWORTHINESS PROVED.

FOR THIS REASON, THE JOIDES RESOLUTION WILL SPEND THE MONTH OF FEBRUARY CONDUCTING SEA TRIALS IN THE WESTERN PACIFIC OCEAN. AFTER THAT, THE JR WILL DOCK IN HONOLULU TO BEGIN PREPARATIONS FOR ITS FIRST SCIENTIFIC EXPEDITION.





NEXT ISSUE: THE ADVENTURE BEGINS ...