

融入新发展格局 谱写市场开拓新篇

【封面故事】融入新发展格局 谱市场开拓新篇

【海外之声】在世界各地“交付”ZPMC的“承诺”

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【创新】自升式平台“中枢神经”的“迭代”

2021年第1期

ZPMC 振华重工

Defining New Chapter of Market Development by Integrating New Development Pattern

[Cover Story] Defining New Chapter of Market Development by Integrating New Development Pattern

[Voice] "Delivering" ZPMC's "Promises" around the World

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制胜市场 一往无前

文 / 李雪娇

“世界上只要有集装箱港口的地方，就要有振华生产的起重机作业，让中国名牌响遍全世界。”这是振华重工在成立之初就肩负的企业使命。多年来，振华重工在市场开拓中披荆斩棘，崭露头角，其岸桥产品的全球市场占有率连续 23 年保持第一，在激烈的市场竞争中站稳脚跟。

市场引领着企业整体发展，找准市场定位、坚持经营策略、创新商业模式、严格防范风险则是市场开拓的题中之义。

振华重工时刻紧跟国家战略，瞄准国家整体部署、产业发展规划、区域发展规划等方向，聚焦长三角一体化发展、粤港澳大湾区建设等国家重大区域发展战略，围绕长江大保护、黄河大保护等国家战略，充分发挥自身优势，加大参与力度；积极融入“以国内大循环为主体，国内国际双循环相互促进”

的新发展格局，抢抓机遇、抢占先机。

在创新商业模式方面，振华重工预研预判、深入挖掘用户产业链、价值链、供应链的多层次需求，探索能够实现利益共享、风险共担、合作共赢、市场接受的商业模式，强化金融模式创新的支撑作用。

安全是发展的前提，振华重工树立底线思维、提高预判能力，不仅抓好国内外的疫情防控，同时防范非传统风险，强化合规管理，为市场运营筑牢安全保障。

市场竞争是残酷的，在复杂的外部环境中，振华重工坚持重市场、固根基，不断锤炼自身，以过硬的核心竞争力，聚焦战略、拥抱创新、提升服务意识和风险意识，在制胜全球竞争的市场风浪中一往无前。



《雨过天霁》作者：韩玲



《牛气冲天》作者：阮婵娟





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振华重工

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融入新发展格局 谱市场开拓新篇

文 / 李 岑

2020年,市场开拓的“空中飞人们”想不到,和海外用户见上一面有那么难;海外的“经营触角”想不到,要买一张机票有那么难;夜以继日的“投标小分队”更想不到,明明已经胜券在握的项目要落地签订有那么难……在全球疫情肆虐和地缘政治等不利因素影响的大环境下,振华重工的市场开拓面临艰巨挑战。面对逆境,公司树立整体“一盘棋”的思想,抢抓市场机遇,主动作为,积极融入“以国内大循环为主体、国内国际双循环相互促进”的新发展格局。





2020 年 8 月，振华重工向新加坡大士港用户交付第一批自动化码头设备。

面向海外，公司积极践行“一带一路”倡议，围绕集团“海外优先”发展战略，基本保持了海外市场的稳固地位。这一年，公司产品成功进入了第 104 个国家和地区，在海外 30 个国家和地区签约落地项目，硕果累累。

针对国内，振华重工积极参与京津冀协同发展、长三角一体化、粤港澳大湾区、海南自贸区、雄安新区、福建市场等重点区域的发展布局，开展与相关省、市政府、重点用户的深度对接，根据区域开发规划及用户战略布局，制定产业进入方案，多地项目落地开花。

市场开拓的征途，如逆势逐光，折射出振华重工在时代的浪潮中为持续高质量发展而付出的不懈努力。

韩国子公司项目经理与用户沟通现场防疫措施。



2020 年 5 月 27 日，振华重工与中远海运港口采用“云签约”方式签订希腊比雷埃夫斯港 PCT 码头三台岸桥项目合同。

千帆竞发 传统新兴多管齐下

这一年，振华重工加强系统策划，提升商务、技术等维度的能力、效率和精准性，着力提升市场竞争力。

传统业务方面，聚焦重点项目、重要区域、重大市场。2020 年先后成功签订并实施了一批有重大影响的传统港机和自动化码头项目、行业领先的海工装备项目，以及大型桥梁钢结构、风电钢结构等基础设施项目。自 2017 年开始，公司已连续 4 年召开码头智能化解决方案交流论坛，先后提出自动化码头建设的“互联网+”、人工智能应用、5G 技术引领以及数字化全生命周期产品和服务。公司持续践行“一流装备加一流服务”的模式，将创新技术与先进理念植入码头的规划、设计、制造、调试、运维全生命周期建设中，打造以用户为中心的综合、智能、高效的全生命周期产品和服务的整体解决方案，全面提升用户体验和信任度。

这一年，公司和很多“老朋友”再谱新篇，与中远海运集团携手，为海南自贸港建设贡献力量；与广州港创新合作，打造粤港澳大湾区首个全自动化码头；与广西北部湾联手，打造国内首个海铁联运自动化码头；与上港集团签订洋山四期自动化码头末批次设备合同……这一年，公司不断扩大“朋友圈”，轨道吊产品首次进入德国铁路堆场市场，成功打开与德国铁路公司合作的大门；散货设备首次进入日本市场，实现技术与市场的双突破；流机产品首次进入柬埔寨市



2020 年 11 月，振华重工第四届码头智能化解决方案交流论坛在上海召开。



2021 年 3 月，东南亚子公司人员拜访 total 客户。



拉美子公司人员拜访墨西哥和黄 EIT 码头用户。



振华重工展台亮相 2020 工博会。

场，获得柬埔寨用户青睐。海工领域成功通过沙特阿美公司供应商体系审核，签约沙特阿美萨拉曼国王船厂下水驳、坞门及升船机项目。

在保持传统业务优势的基础上，公司不断开拓具有发展前景和核心竞争力的新兴业务，坚持市场有需求、振华有优势、双方有共识、合作有共赢的原则，多项新兴业务迸发活力。在智慧停车领域，接连签订多个医院立体车库项目，中标上海金桥智慧停车管理云平台项目，依托智慧停车云平台的综合数据处理分析，使整个试点区域的停车变得更加智能、便捷、绿色。不断探索新商业模式，升级产业链，提升价值链，中标首个城市级智慧停车投资项目衡阳市城区智慧停车管理系统和公共停车场建设 PPP 项目。积极布局老旧小区改造、智慧安防等民生消费业务，中标多个项目。

同频共振 海外经营共克时艰

紧密联动，海外坚守不孤单。面对全球疫情，公司总部与各驻外机构保持沟通交流，实时了解当地疫情发展情况和员工健康状态，落实境外防疫、生活、药品、当地医疗资源、人员基础信息、海外滞留人员、境外安全风险和应急处置等相关工作，确保境外人员工作持续稳定。同时，持续跟踪海外机构针对各区域疫情防控、复工复产、市场动态、最新项目进展等情况，切实做到防疫和生产经营“两手抓、两手硬”。

德国 DB 轨道吊客户派出产前质量审查小组到南通分公司调研。



开拓创新，办法总比困难多。面对疫情带来的挑战，振华重工积极想方设法、开拓创新，借力“智能营销”“云会议”“云签约”等信息化手段，从“面对面”到“屏对屏”，确保疫情防控期间项目交流不掉线、服务不止步、推进不断档，有序推进海外项目落地。2020 年 5 月 27 日，振华重工与中远海运港口签订希腊比雷埃夫斯港 PCT 码头三台岸桥项目，便是首次采用“云签约”形式，通过香港、上海和希腊雅典三地视频连线的方式举行。

共融共赢，属地化建设显成效。振华重工加强属地化建设，切实发挥属地化经营和市场前端经营优势，起到了很好的开发维系海外新老客户、推进海外项目落地、做大做强市场增量的作用。2020 年，南非子公司收获了公司在跨运车领域的里程碑项目、德国子公司签署了公司在欧洲的第一个内场轨道吊合同。公司直面海外疫情蔓延挑战，充分发挥属地化优势，合理调配资源，在海外 27 个国家和地区共完成了 50 个项目的交付工作，为保障全球码头物流的正常运转贡献振华力量，履约能力得到用户高度评价。

逆势逐光，勇毅前行。展望未来，振华重工将不断完善以客户为中心的营销体系建设，坚持重市场、抓机遇、固根基，为推动公司高质量发展、打造具有国际竞争力的世界卓越公司而不懈奋斗。

（供图 / 陆志东、巫宁、杨浩、缪友春、杨树明）

振华重工项目团队为巴拿马港提供 24 小时不间断的技术支持。



矗立在南非德班港的 ZPMC 岸桥。

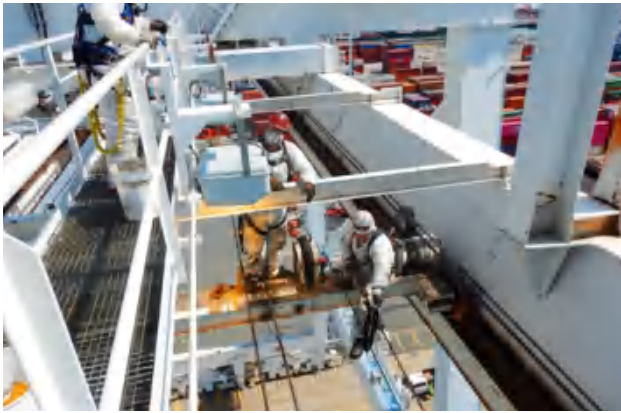


“扎根” 属地的市场开拓 “先锋”

文 / 张礼超 杨 俊 段钧剑

“这是最好的新年礼物！”振华重工美国子公司在 2020 年的最后一天收到来自新泽西 GCT 码头的中标喜讯，将布局 5 年的港机设备项目收入囊中；也是这一年，中东子公司在阿曼探索基于 5G 技术的全自动化港口设备市场，致力实现多方共赢；南非子公司

在疫情和艰难谈判的多重压力下，收获了公司在跨运车领域的里程碑项目……2020 年，振华重工的市场开拓“先锋”捷报频传，这些来之不易的“硕果”，正是遍布全球的海外子公司“扎根”属地，不断进行市场化升级，发挥前端经营优势的缩影。



美国子公司团队在疫情期间为 GCT 码头用户更换托架小车。

5 年耕耘结硕果

新泽西 GCT 项目订单的获得不是偶然。2014 年，振华重工美国子公司成立，短短几年时间里，逐步在洛杉矶、新泽西 / 纽约、弗吉尼亚、休斯顿、南卡、佛罗里达、西雅图建立了服务网点，并在当地招聘了管理人员和服务人员，实现了全面属地化管理。“这些服务网点，几乎覆盖了美国排名前 10 的港口所在地，并能辐射全美所有有振华设备的码头，真正做到及时周到地服务用户。”美国子公司总经理李明介绍道。

GCT 码头位于新泽西州伊丽莎白，是全美第二大港口，此次招标新设备，是该码头自 2015 年以来首次采购新设备，从 2015 年开始，美国子公司就已提前布局。在新泽西地区，ZPMC 拥有一支超过 20 人的服务队伍，团队的管理人员有 30 多年的港机产品服务经验。五年来，这支团队在当地的港口圈无论从



服务质量，还是服务效率，都获得了非常好的口碑。“事实上，GCT 用户很早就已留意我们，我们与其他用户的合作成绩也给 GCT 用户留下了良好印象。”美国子公司副总经理张礼超表示。

“这次项目投标，我们对公司产品从到岸卸船、通电、调试，到试车、交付，都进行了详细的方案阐述，并承诺在公司产品的全生命周期内提供高效、高质量的属地化服务，以增强用户对公司产品的信心。”投标以后，美国子公司更是通过当地的服务团队，与用户保持积极密切的沟通，最终确保项目成功中标。

2020 年，面对疫情冲击，“属地化服务”+“属地化经营”发挥了重要作用，用户深切体会到，即便在疫情如此严峻的形势下，购买振华产品依然能够保障交货期。在美国疫情全面爆发、防疫物资短缺的情况下，子公司给 20 多家美国用户送去口罩。5 月 6 日，美国子公司营销负责人 Jeff Rosenberg 在新泽西物流一度瘫痪的情况下，亲手将 2000 只口罩送到 GCT 用户手中。正是平时的点滴积累，传递给用户“ZPMC 始终与他们在一起”的温暖。

迎接阿曼港口的 5G 时代

“叮”的一声，中东子公司项目经理杨俊的手机消息弹开，是阿曼新国王海塞姆正式登基的新闻，“新国王会给阿曼经济带来什么变化？”杨俊思索着。

近几年，振华的传统港机和散货设备在阿曼市场趋于饱和，新业务增长推进乏力，如何破局是困扰中东子公司的难题。2020 年 1 月底的一天，刚从码头出来的杨俊在街上看到了阿曼电信的广告“5G is coming”，“基于 5G 技术的自动化港口设备！”杨俊的脑海中冒出一个想法，他决定联合国内领先的通信技术供应商在阿曼推广 5G 网络，结合新国王鼓励产业升级的契机，组织一场阿曼 5G 城市智能化解决方案交流论坛。

在论坛上，中东子公司借助阿曼苏哈儿港口正在进行振华自动化设备调试的案例，向阿曼港务局相关负责人详细介绍了自动化港口的发展状况、技术和前景，



中东子公司在迪拜联合开展推广 5G 城市智能化解决方案交流论坛。

对方展现出浓厚的兴趣，并邀请大家第二天继续详谈。第二天，项目经理们着力推广基于 5G 技术的自动化港口设备，目前振华是唯一一家与这家通信技术供应商在中国港口完成轮胎吊远程控制可行性验证的港机制造企业，在这个领域具备优势。听完项目经理们的介绍，这位负责人频频点头，推广效果出乎意料的好。

“这次联合的市场开拓活动不仅提高了振华在阿曼市场的竞争门槛，扩大了通信技术供应商在阿曼的潜在业务，也给阿曼新城带来了超前的规划布局，我们打开了三赢的局面！”杨俊十分兴奋。

让振华跨运车“登陆”南非

“封城了！”2020 年 3 月 26 日，身在南非德班市的南非子公司总经理施俊得到消息。受新冠肺炎疫情影响，整个非洲港口海运业务低迷，市场开拓面临南非子公司员工与用户沟通中。



前所未有的挑战，码头有偿服务由于疫情也无法实施。在只能通过线上会议、电话沟通的情况下，南非子公司依然没有停下脚步。

早在 2019 年 11 月，南非国家交通运输集团旗下的 TPT 开始招标跨运车项目，南非子公司决定抓住机遇，放手一搏。当子公司即将拿下订单时，国内新冠肺炎疫情爆发，用户提出疫情会影响生产和交付，“我们可以不去国内，先在德国开设计评审会，到已经有振华跨运车项目落地的瑞典参观设备……”施俊做着各方面的协调和努力。由于时差，南非子公司常常白天与用户谈判，凌晨与国内同事沟通，凭借正确的经营思路和专业的技术澄清，最终获得用户的认可。

经过严格的评审，在用户即将授标的前夕，南非兰特兑美金汇率暴跌 30%，南非子公司作为南非注册企业只能以南非兰特投标，并且投标时间是 2019 年 11 月，尽管南非子公司在投标时预留了 5 个点的汇率波动，同时也联系了银行中标后锁汇，但利润仍然会受汇率下跌的影响，为此，施俊又开始新一轮的艰苦谈判，并采取了一系列规避汇率风险的措施。经过三个月的波折与等待，南非子公司终于拿到了用户对第一批 22 台跨运车的授标函。这个项目的获得不仅打破了竞争对手在南非跨运车市场的垄断，也是振华重工在跨运车领域的一个里程碑，对公司该项业务的发展意义深远。

（供图 / 张礼超、杨俊、段钧剑）

迎接洋浦港的第一缕阳光

文 / 陈丽平

2月20日清晨，“振华32”轮满载着小铲滩项目第一批8台轮胎吊与2台轨道吊靠泊海南洋浦国际集装箱码头。

海南洋浦港区属天然良港，凭借海南自贸港建设的契机，正逐步发展为面向印度洋、太平洋的国际集装箱枢纽港。中远海运集团旗下的海南港航拟为洋浦国际集装箱码头起步工程能力提升项目投资数亿元，建设内容包括新建集装箱堆场、装卸设备采购、设备自动化改造等。从中远海运以海南港航为平台，与振华重工正式开展合作的2019年中开始，振华重工营销团队便“主动经营”，开始了无数次的“海南之旅”。

经过前期的紧密沟通，2019年8月初的一个下午，振华重工港机经营部大客户经理顾海青接到海南港航用户的电话，“海青，请你本周来海南谈一下洋浦小铲滩项目吧。”都说拿下国内项目的功夫在投标前，顾海青和整个营销团队都知道这次会面的重要性，“好，我们与技术人员一起来，好好聊聊。”顾海青

回复道。

这次会谈，振华团队与用户细致交流了装卸设备的技术参数等需求，基于与中远海运用户在多个国内外项目上有着良好合作基础，用户对振华团队的专业与敬业给予肯定。

2020年3月初，春节复工后的一个早晨，港机经营部总经理陈强收到一则消息：“海南洋浦港项目将于4月正式启动招标。”第二天到办公室，他对之前负责海外市场的商务主管陈丽平和张程骏说道：“今年公司海外业务受新冠肺炎疫情影响较大，我们要积极开拓国内市场，现在正是转型升级的好机会！”陈丽平和张程骏欣然受命，开始了洋浦小铲滩项目的全新挑战。

不过国内项目与海外项目的投标工作差异很大，再加上投标准备时间只有两三周，陈丽平和张程骏压力极大。“国内项目投标有严格的评分细则，投标和开标形式也与海外项目不一样，且投标阶段就需要提交一整套覆盖商务、技术和项目管理等方面的系统性



振华重工为洋浦港小铲滩码头提供的设备靠泊码头。

方案。”陈丽平说，“不仅如此，有些资质文件还需要政府部门认证，非常复杂。”在投标时间非常紧的情况下，张程骏还带队前往小铲滩码头现场交流，以便更贴近用户要求，做足“功课”。


2020年5月8日，到了开标这一天，两人赴广州参加开标会。他们在开标现场发现，公司的投标文件足足有900多页，在几家投标单位中是最厚的，最终公司以评标接近满分的优势拿下了24台场桥的标的。但岸桥项目由于投标不足三家，还要进行第二次招标。5月29日，洋浦小铲滩4台岸桥项目第二次开标，陈丽平又带着厚厚的标书出差广州，经过充分的准备，公司的标书在三家单位中评分第一。结束后，陈丽平给女儿打了个电话，开心地说：“妈妈终于获得胜利



振华重工总设计师张明海带领投标团队跟海南港航用户交流。

啦！”连日加班的疲惫烟消云散。

“在新发展格局下，我们营销人员要适应新形势，坚持做好高端经营和主动经营，这样才能在激烈的竞争中脱颖而出！”张程骏感慨道。顾海青常说：“做项目的同时，要与用户做朋友。最好是项目也做成了，朋友也交到了。”为此，三人前往海南出差的机票攒了厚厚的一叠，与用户的合作也非常愉快。

洋浦小铲滩设备项目分三批发运，将于2021年4月全部到港，待所有设备投产后，洋浦国际集装箱码头将成为海南省首个具备自动化堆场（远控）作业能力的集装箱码头，装卸能力将从65万TEU提升至160万TEU。这些“蓝色钢铁侠”将伫立在海南的碧海蓝天下，每天清晨，迎接洋浦港的第一缕阳光。（供图 / 陈丽平）

海南洋浦港区。

一张来自沙特阿美的“入场券”

文 / 樊祎雷



沙特阿美审核员到振华重工生产现场审查。

“太好了，终于全部拿下了！”2020年5月22日，振华重工沙特阿美船厂项目投标小组传来一片欢腾，项目投标商务主管樊祎雷喜形于色：“振华重工这次参加了下水驳、下水驳浮筒、干坞牵引系统、坞门、升船机五大设备系统的投标，我们拿下所有标段，是公司开拓中东海工市场的一次胜利！”

沙特阿美是世界最大的石油生产公司，业务遍及沙特王国和全世界，沙特阿美船厂项目是由其投资的国际综合港务设施项目，位于沙特东部阿拉伯湾沿岸，项目建成后将成为世界上规模最大的“超级船厂”。振华重工参与该船厂的建设将对公司扩大经营业务范围、拓展海工项目产品类型，拿到与业界国际知名公司展开更多合作的“入场券”具有长期和深远的意义。

项目团队最初接触这个项目是在2018年底，如何在国内外众多竞争对手中脱颖而出？项目团队用“全球合作一体化”的思路寻找业内顶级的专业公司开展合作，以最优化的设计方案赢得业主信赖。

由于项目沟通横跨中国、沙特、德国和英国四个国家，在长达一年半的投标谈判过程中，时差问题考验着项目团队，“我们中午了，沙特刚开始办公；我

们快下班了，欧洲才开始上班，所以项目上的澄清交流会议大多安排在晚上。国内休周六、周日，而沙特则休周五、周六，为了与业主保持顺畅沟通，我们已经习惯了黑白颠倒、没有周末的日子。”项目投标技术主管张亚明说道。

“沙特阿美对供应商的要求极为严格，他们选用的标准都是行业最高标准，你们要做好准备啊！”这是业主聘请的第三方专家来公司审厂考察时的善意提醒。从2019年9月到2020年3月，沙特阿美对公司及生产基地进行了五轮考察，涵盖生产、质量、安全、管理体系、技术等方面。

“你们如何管理设备和仪器仪表？”沙特阿美审核员在现场询问车间管理员，管理员自信地回答：“我们对于设备、仪器仪表都做好台帐登记，对设备进行编号登记并跟踪有效期、状态等信息。同时我们定期进行设备点检和巡检，发现问题第一时间维护处理并做好状态记录。”审核员随即在现场抽查了一台设备的点检记录表，并要来台帐认真核对了设备编号、有效期等信息，满意地竖起了大拇指，“非常好！稳定可靠的生产管理体系才能产出质量可靠的产品！”

“那段日子我们微信会议经常讨论到凌晨，小年夜大家还在加班……”投标质量主管潘凯文回忆说。正是靠着这份坚持不懈和认真执着，项目团队最终拿下了沙特阿美供应商库的“入场券”。

目前，该项目已经全面开工，预计于2021年底至2022年上半年陆续发运至现场。“这是振华重工各单位通力合作的项目，是公司核心装备制造能力在国际舞台上的一次展示，我们有信心面对每一次挑战，圆满完成项目。”项目执行总指挥高峰坚定地表示。

（供图 / 樊祎雷）

“情定”北部湾

文 / 卢杰灵

水鸟翔飞、白鹭起舞，夕阳煮海、浮光跃金……北部湾的美景令人沉醉。“振华重工与北部湾在自动化码头上的结缘，要从两年前说起。”振华重工智慧集团市场营销中心副总经理唐雪辉记忆犹新。

广西作为“一带一路”有机衔接的重要门户，是我国西南地区连接粤港澳大湾区以及东盟国家的关键通道。“我们一直关注着广西的海港，北部湾港身处西南地区，同时具备陆海相通的独特优势，国家给予西部陆海新通道的优惠政策肯定会最先惠及到这里。”唐雪辉表示。

北部湾钦州港大榄坪南7-10号泊位自动化集装箱码头项目是西部陆海新通道重点建设项目，也是打造北部湾国际门户港的关键工程。港口内一个项目的前期筹备，往往需要几年的时间才能立项。在前期阶

段主动经营，抢抓国家重要战略区域发展机遇是项目落地的关键。

2018年11月，振华重工受到北部湾用户邀请，开始按自动化码头进行布局和规划。同年12月，振华重工副总裁张健带队拜访北部湾国际港务集团，对此项目进行初步对接。2019年1月，振华重工邀请北部湾港用户参加首届自动化码头数字化港口技术论坛，拓宽了用户对自动化码头的认识和期待。此后，双方便开始了密切交流。

“那时候，我们下定决心做自动化码头源于你们制作的一部动画视频”，这个视频直观展示了自动化码头装卸流程和振华对“U型”装卸工艺布局的分析与思考。用户看到这个视频后，惊喜地发现项目码头的纵深，非常适合“U型”方案。

北部湾钦州港。



北部湾钦州港建设现场。

“此后，应用户要求，我们派出了各个专业的资深专家，与用户一起就规划布局、工艺流程和设备选型进行方案细化。”智慧集团规划仿真部总工艺师刘光宇回忆道。2020年，振华团队从总承包方的角度，为用户提供了从规划、土建、设备到项目管理、人才建设、运营维护等“全生命周期”的专业分析建议。智慧集团智能系统运维公司系统调试部经理曹卫锋十分感慨：“对整个行业来说，这个项目都是最特殊的自动化码头项目。总承包的范围广，布置工艺又是全新的，在这个项目中为用户提供支持和建议，对我们的技术要求非常高。”

“那时候基本每周一次技术交流会。在讨论IGV导航方式时，由于融合导航在广州南沙项目上还未获得验证，用户在融合导航和磁钉导航系统中举棋不定。我们列出清单，针对两者的稳定性、技术成熟度和价格进行了分析比对。最后用户选择了作业更可靠、性价比更高的磁钉导航模式。”智慧集团智能软件公司系统集成部经理孙斐回忆道。

唐雪辉对岸桥的选型印象深刻：“之前出于投资回报考虑，用户偏向采用码头半自动化、单小车岸桥作业的方案，期望未来再升级到全自动化码头方案，而我们则建议北部湾用户一步到位，直接采用基于双小车岸桥和IGV的全自动化方案。为此，我们邀请多位行业专家，从全球行业发展趋势、全自动化码头技

术发展成熟度、半自动化码头存在的风险、升级为全自动化码头所需增加的费用等多个维度，为用户做了一次专题汇报。最终用户采纳了我们的建议方案。”

“TOS作为港口的中枢大脑，对其运营绩效至关重要。我们根据用户的实际需求，从十多个维度协助用户分析比较市面上的主流TOS品牌，用户对我们提供的参考依据很满意。”智慧集团智能软件公司副总经理梁海玉介绍道。

北部湾港用户通过多家考察比较，最终决定打造全球首个应用U型布局方案、糅合振华系统运维、智能运行中心（IOC）、码头商业智能（TBI）等新理念的港口。经过双方团队的共同努力，钦州港自动化码头项目从“动画视频”细化为双小车自动化岸桥系统+双悬臂轨道吊堆场系统+IGV水平运输系统的“北部湾方案”。2020年9月30日，双方签订项目合同，这是振华重工真正从顶层设计角度交付“一站式解决方案”的项目，也是双方联手打造的全国首个海铁联运自动化码头。

“与北部湾的结缘，是振华重工积极开拓国内自动化码头市场的缩影，也是振华逐步从单机设备供应商向系统集成商战略转型最为重要的一个项目。我们将携手用户，打造全国首个海铁联运自动化码头，助力北部湾建设成为国际门户港。同时也为全球自动化码头的升级迭代贡献‘振华方案’。”唐雪辉说。（供图/卢杰灵）

北部湾用户到振华重工长兴分公司考察交流。



在世界各地“交付”ZPMC的“承诺”

文 / 梁斯量 何文勇 梁明

“Thanks so much for their performance for our project. I have no doubt that it would not have been the success that it was without their work.”（非常感谢他们在这个项目上的贡献，没有他们，这个项目是没法成功的。）在振华重工，有许多交机团队，他们随着远销全球的港机设备奔赴海外，克服疫情、地域、语言文化的困难和阻碍，以超出期待的表现圆满完成设备交付任务，用户的赞誉随着一封封表扬信漂洋过海传递回来，见证着他们付出的努力。尽管他们奋战在世界各地，但是他们的工装上都有一个共同的名字：“ZPMC”。

“逆行”法国勒阿弗尔

2020年7月31日，法国勒阿弗尔GMP码头4台岸桥项目的17人交机团队“全副武装”，从上海出发前往法国。由于疫情影响，交机团队较原计划减员3人。交机期间，团队成员严格执行疫情期间的个人防护，降低被感染的风险。

在卸船期间，交机副组长梁斯量和工人一起站在岸桥电梯轿厢顶部，顶着暴雨和狂风，半米半米地手动上升电梯，将海运时被吹出电缆槽的电梯电缆一节一节地检查并收回电缆槽。经过几次试验和调整，从地面到45米高空的电梯终于可以在送高压电前运用临时电运行，大大提升了拆卸海绑等工作的效率。

码头岸线很长，从新设备敷设到码头的高压坑，现场17个人要搬运总计8吨电缆，总行程1.9公里。梁斯量、邵咏军、刘萌林等人运用丰富的经验，结合码头现有设备，设计了敷设电缆方案，仅用5个小时17人，就完成了4吨电缆行程近千米的敷设入坑任务。

高压送电后，法国用户要求法国特检所进行岸桥电梯和行车的报验后，交机团队才能使用。以往这些报验都由专业人士进行，本次由于疫情原因并未随行。队员们凭借扎实的电气知识，完成了电梯的全部测试，顺利通过报验，并在电梯行车的使用中，进行故障排查，保证交机工作顺利进行。

历时79天，交机团队圆满完成了从卸船到耐久测试的全部交付任务。



项目工程师在检修恢复电梯功能，调试灭火系统。



调试工程师、子公司负责人和用户总经理在关丹港的设备前合影。



关丹港 2 台崭新的 ZPMC 岸桥。



用户司机实际操作后对设备性能赞不绝口。



用户总经理亲自上机体验。

关丹港上的“小年轻”

马来西亚关丹港是马来半岛东海岸最重要的海港和物流中心，2020 年 10 月 31 日，载着 ZPMC 2 台崭新岸桥的“振华 29”轮一到关丹港，立即引起了当地媒体的瞩目，这是 ZPMC 岸桥首次进入关丹港集装箱码头。

码头原有的 4 台岸桥都是有着近 20 年高龄的老设备，让 2 台新来的“小年轻”尽快投入生产，是用户的迫切需求。交机团队在解除隔离的第二天，就在交机组长 Najib 和何文勇的带领下全身心投入了岸桥功能恢复和调试工作中。

11 月，恰逢当地雨季，每天一两场大雨，总在安装调试工作如火如荼时不期而至，何文勇带着电气工程师王栋和易鹏飞在瓢泼大雨中抢着遮盖保护电气设备，经常被淋的全身湿透。雨停后大家又马不停蹄地继续工作，雨后火辣的太阳下，大家已经分不清身上是雨水还是汗水，但是没人有一句怨言。交机团队时常加班到晚上 9 点多，只为了能抢回被大雨耽误的进度。



为了让新设备尽快投产，用户特意提出把 16 小时模拟吊箱耐久试车改为直接实船吊箱作业。交机团队为了保证两台岸桥能正常作业，第一时间解决随时可能出现的故障，电气工程师全部现场待命。其中，两位工程师蹲点驻守在岸桥上，时刻观察这两位“小年轻”的运行状态，并根据用户司机的实际作业习惯，实时调整和修改岸桥作业工况，在经过近 24 个小时的连续作业后，两位“小年轻”不负众望，用完美的“零故障率”完成了它们的实船首秀。2020 年 12 月 10 日，2 台岸桥设备交付，从卸船到交机，只用了 39 天时间，设备的良好状态和交机团队专业高效的工作表现得到了用户的高度认可。

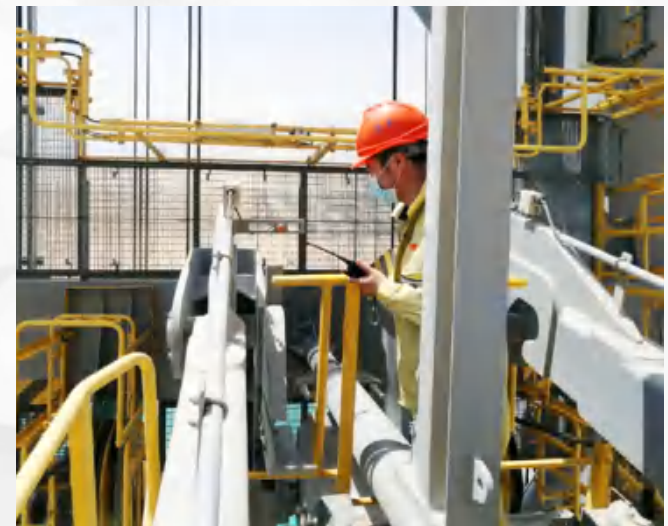
埃及苏科纳交机记

苏科纳港位于苏伊士运河南面入口处，是现代化综合性集装箱枢纽港。用户向振华重工首批采购了 4 台岸桥和 2 台轨道吊，此次交机团队主要负责 4 台岸桥的交付任务。

在苏科纳现场，几乎每天都会见到沙尘暴，住所停水停电更是家常便饭，无线网络也成了奢侈的梦想。除了艰苦环境的考验还需接受心理的磨炼。即便如此，振华工程师们从未抱怨，他们常说：在这个特殊时期出国交机，代表的是中国人的形象、振华人的形象，更需要严格执行公司防疫规定，完成每项任务。

2019 年 12 月初，交机组长王少华、电气工程师梁明等来到码头后立即和用户开会，商讨卸船、送高压等计划。为了抢周期，团队只在大年初一休息了一天，期间克服了码头高压基建尚未完工、新码头高压不稳、供应商外籍调试工程师因疫情提前撤离等困难，2020 年 3 月初基本完成主功能电气调试试车工作，4 月底完成首台机交机任务。后续人员交替，电气工程师吴冬建、冯巩、周琮策前往埃及继续参与项目交机。

埃及用户要求很高，耐久零故障且不允许复位，由于电控系统供应商的外籍调试人员撤离，现场三台设备的部分电控调试以及耐久尚未完成，他们在做好本职工作的同时还肩负起了电控调试重任，通过加强与电控商人员的远程联络，对原始程序进行了多处优化提升，保证了耐久工作顺利



完成。

2020 年 11 月底，苏科纳码头疫情形势愈发紧张，但此时正值岸桥耐久工作的关键阶段，现场团队加强防控力度，坚持每天出勤。经过最后几个月的奋战，4 台岸桥均以完善状态通过耐久测试，设备运行情况和团队工作都得到了用户充分认可。在完成交机后不久，用户又与公司签订了沙特 10 台岸桥订单，并发来感谢信，赞扬了现场团队在交机工作中的优异表现。

（供图 / 梁斯量、何文勇、梁明、纳吉）

走向东帝汶的振华足迹

文 / 刘 奇

“这个项目如果中标的话，我们的拳头产品将首次进入东帝汶，这意味着公司产品进入了第 104 个国家和地区，意义重大，一定不能松懈。”振华重工 Timor 港港机项目投标负责人黄华说道。从 2020 年初用户发来第一封邮件，到项目进入技术与商务方案洽谈阶段，投标小组始终绷着这根“弦”。

Timor 港由法国波洛莱集团运营，截至目前，振华重工已为法国波洛莱集团在几内亚、科特迪瓦、贝宁、塞拉利昂、多哥、刚果（布）、加纳等多个国家的码头，累计提供了超过 40 台港机设备。

2017 年，当法国用户在 Timor 港刚进行基建时，便向振华重工询问了大概的设备技术方案，直到 2020 年初，用户发来了第一封关于技术细节的对接邮件，一下子提振了投标小组的信心，“这意味着，经过比较，用户注意到了我们。”黄华说道。

由于时差，法国用户的上班时间正是投标小组的下班时间，对于投标小组来说，晚上开会已是家常便饭，负责人每天下班必带好装有全部技术资料的电脑，

其余组员保持二十四小时手机开机状态，以便随时开会。

“喂，老金，先别吃饭了，用户召集开会讨论一个技术问题。”一天晚上，黄华给项目机械工程师金浩平打电话，“没问题，我现在上线。”原来，用户对岸桥交付后的轮压是否会损坏码头地面产生了疑虑，黄华和金浩平迅速确认了相关参数，发现数据并没有问题。经过一番耐心细致的解释，两人打消了用户的顾虑。此时已是晚上 11 点。“晚点没关系，问题解决了，大家晚上睡得更香。”黄华打趣道。

自此之后，投标小组与法国用户之间的沟通逐渐常态化，直到 2020 年 5 月份，双方刚刚敲定技术方案，准备开启商务谈判时，又由于种种原因与法国用户断了联系。“那段时间，大家都很紧张，生怕前功尽弃，我们只能单方面梳理和完善商务方案。”4 个月后，随着当地疫情缓和，投标小组与用户再次建立联系，双方迅速进入商务谈判。

“在整个投标过程中，商务谈判环节是签约前

的‘临门一脚’。我们必须事无巨细。”黄华说道。按照常规程序，投标小组需要在这一阶段前往东帝汶 Timor 港，实地考察港口环境、水深等要素，以降低合同风险。可是全球疫情肆虐，投标小组出国无望，必须另寻他法。“我们自己到不了现场，当地人可以去。”投标小组找到当地的代理商，通过代理商的视角进行了一次“云考察”，再结合网上获悉的数据及用户反馈的数据，投标小组用一周时间，将 60 多个考查项悉数掌握，进一步完善了技术和商务方案。

2020 年 11 月，为了展示诚意，也为了加深用户对振华重工的了解，投标小组邀请用户代表——波洛莱集团中国区 CEO Stephane，参加了振华重工每年

一度的码头智能化解决方案交流论坛，用户在了解振华重工发布的新技术后说道：“你们发布的新技术、新理念让我非常震撼，我会尽快向总部反映我的见闻，尽快达成我们之间的合作。”

2020 年 12 月，双方顺利签订采购合同，振华重工正式中标 Timor 港 2 台超巴拿马型岸桥和 4 台电气轮胎吊项目。在新冠疫情影响下，这次中标极大提振了公司拓展海外市场、开展海外业务的信心。

“下一步就是造好设备，等到 2022 年项目交付后，我们的产品就会真正站在第 104 个国家和地区的国土上，助力东帝汶的集装箱装卸运输了。”黄华笃定地说道。

（供图 / 黄华）

正在基建中的东帝汶 Timor 港。

自升式平台“中枢神经”的“迭代”

文 / 徐 欢

升级改造后进行
动态升降测试的
自升式钻井平台。

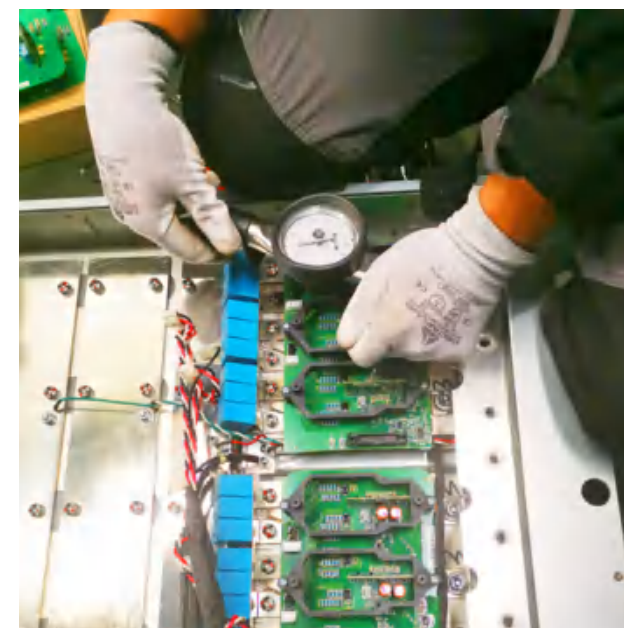
近年来，近海海工装备制造业发展迅速，自升式平台如雨后春笋般涌现在茫茫大海上，其中，电控升降系统是这些平台的核心配套件，堪称自升式平台的“中枢神经”。振华重工在十几年前通过自主研发实现升降系统国产化之后，便一直致力于它的“迭代”。

随着升降系统在各个自升式平台上的应用和推广，反馈回来的数据逐渐可以“告诉”设计师许多信息。经过多年来的实践数据整理比对，从2015年开始，设计师们发现升降系统出现一种“误报警现象”。“误报警现象”源于自升式钻井平台的特殊工况，尤其是当系统处于长期“休眠”以及海上湿度大等客观条件下，如果缺乏对设备的系统性维护，便有可能出现这种现象并导致升降系统停止运行，一旦停止运行，平台位置将处于被锁定状态。振华研发团队决定进一步优化平台升降系统的性能，为系统“迭代”。

海上自升式平台通常由三个桩腿支撑，共有6个升降系统模块，两两分布于每个桩腿的电气控制室内。以往发生“误报警现象”后，通常需要更换升降系统模块，工作量大，如果平台上没有可更换的模块备件，还要从陆地上调货，维修周期长，效率低。从根本上解决这个问题的任务，便落在了振华重工海工院副主任设计师胡闻嘉的肩上。

“为此，我们与用户之间达成合作，以实际运营的平台作为研究试点，经过几轮验证，我们确认了‘误报警现象’与升降系统中的元器件‘测量板’有关。”测量板就是升降系统中的‘监测员’，它的工作就是比对接收到的参数和传输出的参数是否一致，一旦“监测员”自身出现问题，即使没有实际外部故障，也会发出故障报警，进而锁定升降系统，截停运行中的平台。“平台运行中，数据瞬息万变，每一个部件都应确保可靠、稳定运行，不能因小失大。”胡闻嘉解释道。

“更换一个模块至少要三十万元，换一个测量板只要几千块。”为了降低海上平台运行风险，并从用户的经济利益考虑，研发团队将存在故障的测量板发往实验室进行数据分析和跟踪，期间多次和供应商对



工作人员正在更换设备的测量板扭矩标定。

于板卡的使用材料开会讨论。最终在2019年推出了稳定性更强的“884E版”测量板。

但是，要从各个海域将升降系统整机发回车间更换测量板的工作量过于庞大，而现场更换对于非专业人员难度极大，更换不当会对系统造成损害。2020年初，振华团队和用户达成协议，对4套升降系统进行升级改造。为此，胡闻嘉和两名设备工程师前往现场，对其中的144块测量板进行了更换，同时又对升降系统做了深度保养，给用户进行了系统培训，经过静态和动态多项测试达标后，顺利完成升级改造工作。“找到‘症结’，我们只需要拿起‘手术刀’，剔除‘病灶’就行了。”参与升级改造的振华重工海工院研发工程师汤俊杰说道。一年来，用户反馈系统的稳定性得到了保障，基本杜绝了误报警现象。

“这次升降电控系统顺利升级改造，离不开用户的支持与合作，能帮助用户解决实际问题，我们很有成就感。”汤俊杰说道，“设备的迭代没有终点，我们会不断完善相关技术，为海洋强国战略贡献力量。”

（供图 / 胡闻嘉）

“无人驾驶”的“七彩岸桥”

文 / 胡 萍



设备到岸。



设备完成卸船。

天津港的海岸线，矗立着 6 位蓝色“钢铁巨人”，胸前佩戴着红橙黄绿青蓝不同色彩的“领带”，一眼望去，为码头平添几分俏丽。

它们便是振华重工为天津港北疆 C 段智能化集装箱码头量身定制的“七彩岸桥”。衣着惊艳，实力更不容小觑。“这些岸桥最重要的创新，在于全部取消了司机室，实现了陆侧全自动化操作，称得上是目前业内最先进的全自动化单小车岸桥。”振华重工项目经理顾建荣说道。

以往，岸桥抓取集装箱放到自动引导运输车或集卡上，均需要司机手动进行着箱作业，随着智慧港口建设

的提速，越来越多的自动化设备为码头工人减负。国外的荷兰鹿特丹港、国内的洋山港率先试水为双小车岸桥取消司机室。“远程操控司机坐在宽敞明亮的中央控制室，通过电脑屏幕就能监控整个作业流程，再也不用高空作业了！”振华重工项目总工程师吕佳解释说，“在天津港北疆 C 段集装箱码头项目上，我们的自动化更进一步，实现了真正意义上的全自动化无人操控。”

为了满足天津港用户对“七彩岸桥”的全新期待，振华项目团队不断创新，最终确定为天津港定制打造无司机室的全自动化单小车岸桥，并创造性地实现陆侧一键着箱操作。

“司机室的存在是为了本地操作。但配备司机室时，岸桥大车移动会影响司机室的稳定，为了考虑司机工作的安全，岸桥的加速度和减速度都会受到一定限制。如今取消司机室，岸桥受限降低，可有效缩短整船集装箱的装卸周期。”吕佳补充说，“实际上双小车岸桥取消司机室的先例早已有之，但单小车岸桥取消司机室的项目极少。”以往无司机室岸桥在陆侧一面需要人工远程介入控制，但天津港北疆 C 段智能化集装箱码头（一期）岸桥通过对起升负载科学控制、对地面目标实时扫描和引导，配合吊具精确定位功能，最终实现陆侧全自动化、无人化操作，推动岸桥远程控制无人自动驾驶技术在天津港落地。

技术尝鲜总伴随着困难和挑战。机型的全新升级，尤其是司机室的取消，意味着设备在机械架构与电气系统等方面均需严谨考量和合理调整。但时间不等人。

“可以说，这是振华重工目前接手的最短周期的自动化码头项目。”吕佳一语道破项目团队内外面临的挑战。

为了按节点推进计划，设计团队主动放弃休息时间，加班加点优化设计图纸。受新冠肺炎疫情的影响，很多讨论会改到线上进行，大家充分利用一切有效时间抢抓项目进度，仅用一个多月时间便完成设计初稿。为了帮助用户更好地进行决判，项目团队还成立 3D 建模小组，通过数字化方案助力全新机型的快速落地。

经过不懈努力，振华团队在“七彩岸桥”项目上刷新了港机设备的“上线速度”：2 个月完成首台设备总装，6 个月实现首批设备发运，1 周时间恢复首批设备的单机功能，4 周时间实现设备远程控制，45 天就实现了码头生产作业系统与设备控制系统的对接联调……

2021 年 1 月 17 日，天津港北疆港区 C 段智能化集装箱码头 1 号泊位顺利实现联调联试，振华重工为其提供的 6 台岸桥设备惊艳亮相。“设备的良好运行，也为我们赢得了天津港北疆 C 段智能化集装箱码头（二期）6 台岸桥订单，如今新订单也陆续开工了！”顾建荣笑着说。

（供图 / 季学卿、陆庆年）

守护天使的笑容

文 / 王胜男

“谢谢你们帮孩子们搬家！”乔迁在即，看着振华重工“蓝马甲”志愿者们忙碌的身影，鲁冰花舍的阿姨脸上满是感激。鲁冰花舍是中华少年儿童慈善救助基金会西部儿童救助基金下的一个公益项目，主要救治患有先天性疾病被父母遗弃的孤残儿童。五年前，一次偶然的机会，振华重工与鲁冰花舍结缘。志愿者们数年如一日，用爱心守护着小天使们的笑容。这次鲁冰花舍搬家，志愿者们又及时赶来。

“思佳，还认不认识我呀！”搬家当日，志愿者蔡佳俊一眼就认出了那个白白胖胖的小女孩，正是曾经患有严重脑积水的李思佳。李思佳于2017年7月4日来到鲁冰花舍，第二天便被送至上海儿童医学中心接受治疗。

“当时她的身上插满了管子，情况很危急，需要人24小时寸步不离地照料。”但鲁冰花舍人手少，只有一个阿姨在小思佳身边，忙得连吃饭的时间都没有。因此，振华重工的志愿者们便利用中午、晚上的休息时间，每班两人结伴前往上海儿童医学中心，给阿姨送饭，给思佳带去牛奶、水果，代替阿姨照顾小思佳。这样的探望持续了一个月，直到小思佳顺利出院。如今，小思佳已经3岁多了，很是粘人，见到曾经照顾过她的志愿者们，便会伸出手要“抱抱”。“虽然脑积水影响了她的智力成长，但好在病已治愈，希望有好心人收养她，让她感受家庭生活的温暖。”鲁冰花舍的阿姨说。



振华重工志愿者与鲁冰花舍儿童在一起。



振华重工志愿者前往鲁冰花舍进行志愿服务。

除了李思佳外，还有许多患病的孩子被送到上海各大医院进行治理。公司离上海儿童医学中心很近，因此照顾这里的花舍患儿被公司“承包”了。只要有孩子在这里治病，鲁冰花舍的工作人员便会联系公司的志愿者。不仅振华，每一家

医院附近都有这样一支后备力量。

经过治疗后，孩子们会回到鲁冰花舍暂时休养。鲁冰花舍会为孩子们寻找愿意接纳他们的养父母。志愿者们也会不定期地前往花舍探望，做一些义工服务，陪伴孩子们玩耍。“这些孩子里，有唐氏宝宝、兔唇宝宝，还有患听觉障碍的……这个小男孩我们叫他‘大宝’，曾患有先天性心脏病。”蔡佳俊指着手机里的照片说。大宝病愈后，成了一个聪明健康的宝宝，大家都很喜欢他。原本有一对中国夫妻想要收养他，但由于未达到收养条件，只好转由一对美国夫妻收养。前不久，大宝的中国养父母还特地飞往美国探望大宝。这些在志愿服务中的所见所闻，让志愿者们感受到了人间真情。

每年三月的爱心义卖是振华重工救助患病儿童的又一举措。公司里的爱心人士，会通过这种方式帮助孩子们。“未来我们还将继续关注鲁冰花舍，希望每一个降临在世间的孩子都能健康茁壮成长。”蔡佳俊说。

(供图 / 王胜男)

振华重工参建洋山四期工程斩获鲁班奖

近日，由中国建筑业协会组织开展的“2020 ~ 2021 年度中国建设工程鲁班奖（国家优质工程）”（以下简称“鲁班奖”）第一批入选工程评选结果揭晓，振华重工参与承建的上海国际航运中心洋山深水港区四期工程榜上有名。

洋山深水港四期工程是上海国际航运中心的重要组成部分，工程总用地面积 223.16 万平方米，配置了 26 台自动化岸桥、119 台自动化轨道吊以及 135 台自动导引运输车（AGV），历时 4 年通过验收，实现了我国传统集装箱港区作业向自动化、智能化作业方式的跨越，标志着我国自动化集装箱港区的设计技术理念、土建安装施工、装卸工艺设备、生产系统控制等领域已处于世界领先水平。

作为迄今全球单体最大、自动化程度最高的集装箱码头，振华重工在洋山深水港四期工程运用了大量

创新：世界首创的远程控制超大型自动化双起升双小车岸桥、自动化全系列轨道吊和世界首创的自动化双箱高速轨道吊，实现设备建造全生命周期的智能、安全、环保和高效运行。自主研发了更换锂电池式全电动无人驾驶重载集装箱导引车（AGV）及大规模车队管理系统，大幅升设备运行效率。自主研发的自动化集装箱码头设备管理控制系统（ECS），与码头生产管理系统（TOS）完美融合，攻克了大型自动化码头作业全过程的设备能力、计划控制、调度执行的协同等技术难题，实现作业状态的实时监控、动态调整，运行效率最大化。

目前，ECS 系统已在上海洋山四期全自动化集装箱码头得到全面应用，振华重工还将其推广到广州南沙港四期、广西北部湾钦州港、意大利瓦多港、阿布扎比哈里发港、摩洛哥港、以色列海法港等自动化码头项目中。

振华重工与海南港航签订 集装箱设备采购合同

2月7日，振华重工与中远海运集团直属单位海南港航在海口市举行会谈，并签署海口港集装箱码头能力提升项目（一期）集装箱设备采购合同。

中远海运是振华重工长期以来重要的战略合作伙伴，双方在国内外多个码头开展了深入合作。2020年，双方克服全球疫情等不利因素影响，成功签订了希腊 PCT 码头岸桥、希腊 PPA 岸桥和轮胎吊等多个海外项目，并在国内签订海南洋浦港小铲滩 4 台岸桥 24 台场桥项目。本次海口港项目的成功签订，进一步延续了双方一直以来的紧密友好的战略合作关系，本次合作还包含轻型岸桥和轨道吊，采用半圆形大梁结构（ZMH）创新设计，具有轮压低、节能降耗等显著特点。

全国首个集装箱智能清洗系统 通过验收并交付使用



近日，振华重工为上海老港废弃物处置有限公司打造的全国首个集装箱智能清洗系统通过专家团队的现场验收，正式交付使用。

振华重工新打造的集装箱清洗系统智能高效且安全环保。基于现场应用工况，该项目配置了集卡引导系统、集装箱平面运输系统、洗涤剂涂布系统、清洗系统、废水处理利用系统、清洁度检测系统等六个功能模块，通过中央控制系统进行智能化处理，实现箱车分离、清洗、辨识、数据共享等功能，洗箱节拍实现 100 秒 / 只，比传统手工清洗快 15-20 倍，实现了经济效益与社会效益双丰收。该技术已获发明专利授权。

国务院发文推广绿色低碳船舶

近日，国务院正式发布《国务院关于加强建立健全绿色低碳循环发展经济体系的指导意见》（简称指导意见）。指导意见提出，建立健全绿色低碳循环发展经济体系，促进经济社会发展全面绿色转型，是解决我国资源环境生态问题的基础之策。

指导意见从健全绿色低碳循环发展的生产体系、健全绿色低碳循环发展的流通体系、健全绿色低碳循环发展的消费体系、加快基础设施绿色升级、构建市

场导向的绿色技术创新体系和完善法律法规政策体系等六个方面部署了重点工作任务。

在健全绿色低碳循环发展的流通体系方面，指导意见要求，打造绿色物流，推广绿色低碳运输工具，淘汰更新或改造老旧车船；加大推广绿色船舶示范应用力度，推进内河船型标准化；加快港口岸电设施建设等；深化绿色“一带一路”合作，拓宽节能环保、清洁能源等领域技术装备和服务合作。

2020 全球海上风电数据最新出炉 中国再次领跑

2 月 25 日，全球风能委员会发布的最新数据分析显示，2020 年全球海上风电新增装机容量超过 6 吉瓦，增长量仅次于 2019 年；中国连续三年领跑全球，新增容量超过 3 吉瓦占全球新增一半以上。

中国 2020 年海上风电新增装机量超过 3 吉瓦，占全球新增装机 50.45%；海上风电总容超过德国，仅次于英国，成为全球第二大海上风电市场。

欧洲保持稳定增长，占据剩余的大部分新增容量，其中，荷兰的年新增容量仅次于中国，安装近 1.5 吉瓦装机；比利时（706 兆瓦）、英国（483 兆瓦）和德国（237 兆瓦）也有所新增；新增漂浮式海上风电装机仅来自葡萄牙（17 兆瓦）。

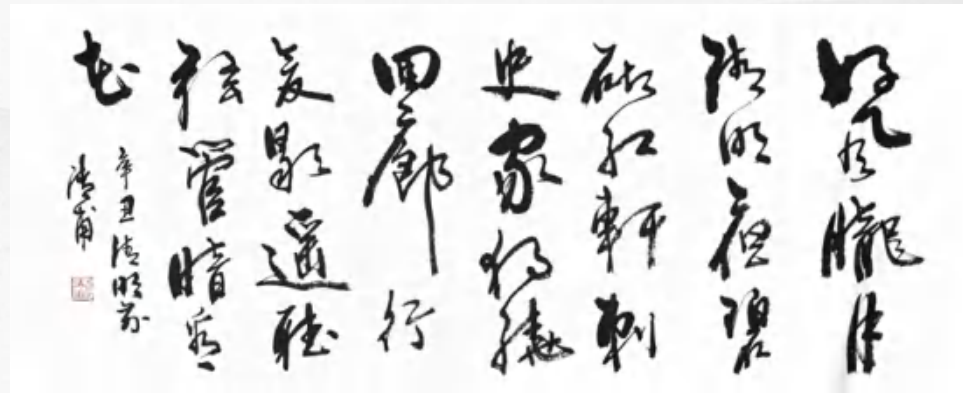


续航里程超过 26000 海里！我国自主研发 VLCC"远福洋"轮交付

据悉，"远福洋"轮是继“远华洋”轮、“远贵洋”轮之后，第 3 艘国内登记的最大载重吨国际船舶入列“中国洋浦港”。由此，在国际原油航运市场上，“中国洋浦港”拥有了属于自己的超 30 万载重吨的“三驾马车”。这也是 2021 年以来入籍“中国洋浦港”的第 4 艘国际船舶。截至 2 月 26 日，入籍“中国洋浦港”国际船舶达 26 艘。

据介绍，“远福洋”轮是大连大船集团为中远海运能源公司量身打造的节能环保型防泥沙 VLCC 系列产品第 3 艘，与去年交付使用的“远华洋”和“远贵洋”轮属于同类型的姊妹船。船长 333 米，型宽 60 米，最大载重量 31.9 万吨，续航里程超过 26000 海里，可在全球范围航行。该船采用直艏设计的型线，桨前设有节能导轮，节能效果明显，每日燃油消耗为系列船最少，节能环保性能优异，降低了大量运营成本。

据介绍，考虑到航线中必经的马六甲海峡水深有限，本船的设计吃水为 20.5 米，这样船舶即使正常装载 220 万桶原油也可以直接通过马六甲海峡，无需等待。



《清明夜》作者：彭清甫



《春风拂振华》作者：霍博义



《雅气和晖》作者：陈波

Forging Ahead to Win the Market

by Li Xuejiao

“Where there is a container port, there are cranes produced by ZPMC, a Chinese top brand to be recognized in all corners of the world”. This is the corporate mission of ZPMC from the beginning of its establishment. Over the years, ZPMC has stood out in the market by overcoming various obstacles. With its market share of STS cranes remaining first for 23 consecutive years, ZPMC has gained a firm foothold in the fierce market competition.

As market leads the overall development of enterprises, to find the right market position, adhere to the right business strategy, innovate the business model and strictly guard against risks are the key points of market exploitation.

ZPMC always keeps up with the national strategy, aims at the overall national deployment, industrial development planning, regional development planning and other directions and focuses on major national regional development strategies such as the integrated development of the Yangtze River Delta and the construction of Guangdong-Hong Kong-Macao Greater Bay Area. By focusing on the national strategies such as protecting the Yangtze River and the Yellow River, ZPMC gives full play to its own advantages and devotes greater efforts to participating in these national strategies. Moreover, ZPMC actively integrates itself into the new” dual-circulation development pattern which takes the domestic market as the mainstay while letting domestic and foreign markets boost

each other” and tries to seize opportunities and capture the market.

To innovate business model, it is necessary for ZPMC to make pre-researches and pre-judgment, deeply tap the multi-level needs of users regarding their industrial chain, value chain and supply chain, explore a business model featuring benefit sharing, risk sharing, cooperation and win-win results and market approbation, and strengthen the supporting role of innovative financial model.

Safe environment is the premise of development. Therefore, it is necessary for ZPMC to establish a bottom-line thinking and improve its ability of pre-judgment. To provide a safety guarantee for market operations, ZPMC has to do a good job in epidemic prevention and control at home and abroad, guard against non-traditional risks and strengthen compliance management.

Market competition is always cruel. In the complex external environment, ZPMC insists on attaching importance to the market, strengthens its foundation, constantly tempers itself, focuses on strategy and embraces innovation. With its strong core competitiveness, ZPMC is committed to improving its service awareness and risk awareness and forges ahead to win the global competition in the market against winds and waves.



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Defining New Chapter of Market Development by Integrating New Development Pattern

by Li Cen

In 2020, the “frequent flyers” who were busy with market development never thought that it was so difficult for them to meet the overseas clients.. The overseas “business tentacles” never thought that it was so tough for them to buy air tickets. The “bidding team” who had worked day and night for a project never thought that it was so hard for them to go to the destination to sign the project they had already won ... Affected by the global epidemic outbreak and unfavorable geopolitical factors, ZPMC faces arduous challenges in terms market development. Facing the adversity, ZPMC established an overall “a game of chess” idea, trying to seize the market opportunities, taking the initiative and integrating itself into the new “dual-circulation development pattern which takes the domestic market as the mainstay while letting domestic and foreign markets boost each other”.



In August 2020, Southeast Asian subsidiary delivered the first batch of automatic terminal equipment for users of port Dashi, Singapore.

For overseas markets, ZPMC actively promoted the “the Belt and Road Initiative” and basically maintained a stable position in overseas markets by focusing on the Group's overseas priority development strategy. In 2020, ZPMC's products have successfully entered the 104th country and region, and signed contracts of implement projects in 30 countries and regions, bringing fruitful results.

For domestic markets, ZPMC actively participated in the development layouts of key areas such as Beijing–Tianjin–Hebei coordinated development, the integration of Yangtze River Delta, development of Guangdong–Hong Kong–Macao Greater Bay Area, Hainan Free Trade Zone, Xiong'an New Area and Fujian market, and carried out deep docking with relevant provincial and municipal governments and key users. According to regional development planning and strategic layout of users, ZPMC worked out plans to enter the industries and successfully implemented a lot of projects.

The project manager of the Korean subsidiary communicated with client on site Covid prevention measures.



The journey of market development is like chasing the light in darkness, showing ZPMC's unremitting efforts for sustained and high-quality development in the tide of the times.

Multiple Measures Attached to Traditional and Emerging Businesses

In 2020, ZPMC strengthened its systematic planning, improved its capability, efficiency and accuracy in business and technology, and made great efforts to enhance its market competitiveness.

For traditional business, ZPMC focused on key projects, important regions and major markets. In 2020, ZPMC has successfully signed and implemented a number of influential traditional port machinery and automatic terminal projects, industry-leading offshore equipment projects, and infrastructure projects such as large-scale bridge steel structures and wind power steel structures. Since 2017, ZPMC has held the Smart Terminal Solutions Forum for four consecutive years, and has successively proposed “Internet +”, AI application, 5G technology leading, digital lifecycle products and services for automatic terminal construction, thus gradually transferring innovative technologies and advanced concepts into terminals' full lifecycle construction. ZPMC continues to practice its mode of “first-class equipment plus first-class service” and implants innovative technology and advanced concepts into the full lifecycle of smart terminal from planning, design, manufacturing, commissioning to operation & maintenance so as to create an overall user-oriented solution with comprehensive, intelligent and efficient full lifecycle products and services to fully improve user service experience and trust.

In 2020, ZPMC worked with many of its “old friends” to define a new chapter. For example, it cooperated with COSCO Shipping to contribute its strength to the construction of Hainan Free Trade Port. It also cooperated with Guangzhou Port in an innovative manner to build the first fully automatic terminal at Guangdong–Hong Kong–Macao Greater Bay Area. It joined hands with Guangxi Beibu Gulf to build the first automatic sea–rail intermodal terminal in China; It signed the last batch equipment contract with SIPG for Yangshan Phase IV Automatic Terminal ... In 2020, ZPMC continued to expand its “friend circle”, and delivered its crane products into the railway yard market of German for the first time, which successfully opened the door to cooperating with Deutsche Bah; its bulk equipment entered Japanese market for the first time, making dual breakthroughs in technology and market; its reach stackers entered Cambodian market for the first time and won the recognition of Cambodian users. In terms of offshore industry, ZPMC successfully passed the supplier system audit of Saudi Aramco, and signed the projects



In November, 2020, the 4th wharf intelligent solution exchange forum of Zhenhua heavy industry was held in Shanghai.



In March 2021, Southeast Asian subsidiary personnel visited client from Total.



Latin American subsidiary personnel met client in EIT Terminal, Mexico.



ZPMC showcase at 2020 industry Expo.

of launching barge, dock gate and ship lift for Saudi Aramco’ s King Salaman Shipyard.

On the basis of maintaining its advantages in traditional business, ZPMC continues to explore emerging businesses with development prospects and core competitiveness, and adheres to the principle of “meeting market demand, using ZPMC’ s advantages, reaching consensus and making win-win cooperation” , and many of its new businesses show great vitality. In the field of intelligent parking, ZPMC successively signed several 3D garage projects with several hospitals and won the bid for Shanghai Jinqiao Intelligent Parking Management Cloud Platform project. By relying on the comprehensive data processing and analysis capability of the intelligent parking cloud platform, the parking in the whole pilot area has become more intelligent, convenient and greener. By constantly exploring new business models, upgrading the industrial chain and improving the value chain, ZPMC won the bid for the first urban intelligent parking investment project – Hengyang Urban Intelligent Parking Management System and Public Parking Lot Construction PPP Project. ZPMC actively participates in people's livelihood consumption businesses such as renovation of old residential areas and smart security projects and won the bids for several projects.

Jointly overcoming difficulties in overseas operation

ZPMC’ s headquarters supports its overseas employees through close communication, making them never feel alone in the tough time of epidemic outbreak. Facing the global epidemic outbreak, ZPMC’ s headquarters maintained close communication with its overseas organizations, understood the local epidemic situation and the health status of its employees in real time, and implemented epidemic prevention measures, sourced living materials and drugs, sought local medical resources, recorded basic information of its overseas employees, helped those stranded in foreign countries, took measures to

Pre-production quality control team from DB, German, inspected Nantong Branch.



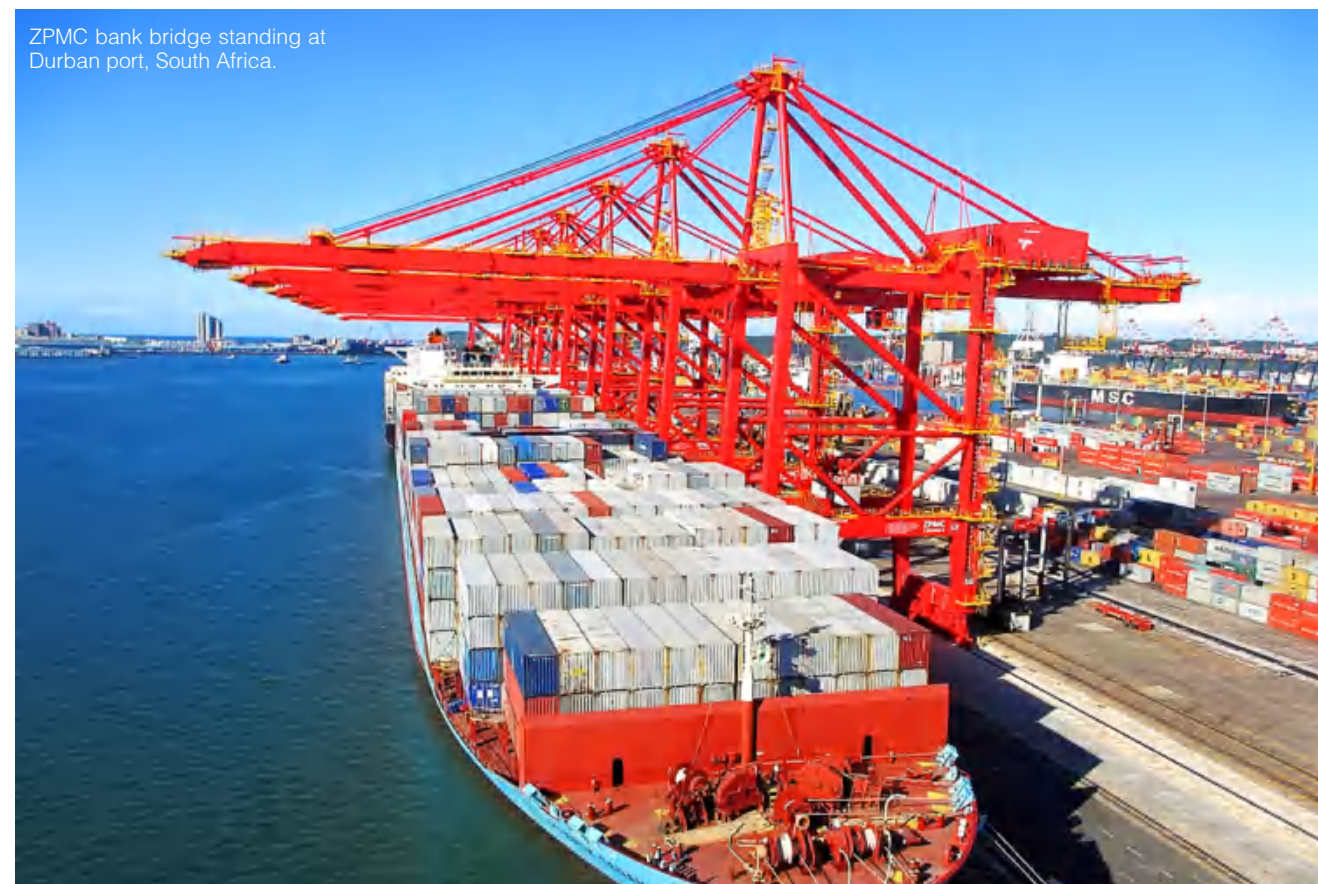
prevent overseas safety risks and responded to emergencies so as to ensure the stable and sustainable work of its overseas employees. At the same time, ZPMC continuously tracked the responses of its overseas organizations in terms of epidemic prevention and control, resumption of work and production, market dynamics, latest progress of projects, etc. in different regions, so as to ensure that both epidemic prevention and production were properly advanced.

As the saying goes, there is a will, there is a way. Facing the challenges brought by the epidemic outbreak, ZPMC actively tried every means, pioneered and innovated, and took advantage of information means such as “intelligent marketing” , “cloud conference” and “cloud contract signing” to shift from “face-to-face” meetings to “screen-to-screen” meetings, so as to ensure that its project exchange would not be disrupted, its services will not stop, the proceeding of its work will not be interrupted so as to promote the implementation of overseas projects in an orderly manner. On May 27, 2020, ZPMC and COSCO Shipping Ports signed the project of three STS cranes for the PCT Terminal in Piraeus Port, Greece, which was held in the form of “cloud signing” by online video connection between Hong Kong, Shanghai and Athens of Greece for the first time.

ZPMC’ s integration and win-win strategy and localization construction achieved initial results. ZPMC strengthened the localization construction and gave full play to the advantages of localized operation and market frontier operation, which plays a good role in developing and maintaining new and regular overseas customers, promoting the landing of overseas projects, and enlarging its market increment. In 2020, ZPMC’ s South African subsidiary won a milestone project in the field of straddle carriers, and its German subsidiary signed ZPMC’ s first infield RTG contract in Europe. Facing the challenge of the spreading epidemic, ZPMC made full use of its local advantages, reasonably deployed resources and delivered 50 projects in 27 countries and regions, by which ZPMC contributed its strength to ensuring the normal operation of global logistics. ZPMC’ s strong contract performance ability was highly praised by users.

Chasing the light in darkness and moving forward bravely. Looking forward to the future, ZPMC, in the general trend of building a new development pattern, will constantly improve the construction of its customer-oriented marketing system. By insisting on attaching importance to the market, seizing opportunities and strengthening its foundation, ZPMC makes unremitting efforts to promote itself to achieve high-quality development and build itself a world-class outstanding company with international competitiveness. 🌐

(photo / Lu zhidong, Wu Ning, Yang Hao, Miao Youchun, Yang Shuming)



ZPMC bank bridge standing at Durban port, South Africa.

Marketing “Pioneers” Rooted in Local Markets

by Zhang Lichao, Yang Jun and Duan Junjian

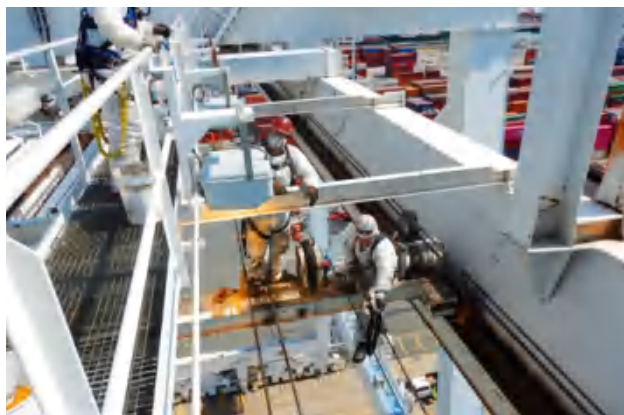
“This is the best New Year gift!” On the last day of 2020,

ZPMC’ s American subsidiary received the good news of winning the bid from GCT Terminal in New Jersey and finally won the port machinery project after 5 years of efforts. Also in 2020, ZPMC’ s Middle East subsidiary explored the fully automatic port equipment market based on 5G technology in Oman to seek win-win results for multiple stakeholders. Under the multiple pressures brought by epidemic outbreak, ZPMC’ s South African subsidiary gained a milestone project in the field of straddle carriers ... In 2020, ZPMC's market developing “pioneers”

sent back good again and again. These hard-won “fruits” just represent the achievements of ZPMC’ s overseas subsidiaries rooted in local markets around the world by implementing marketized upgrading and giving full play to the advantages of front-end operation.

Five years of hard work yielded fruitful results

ZPMC did not win the order of GCT project in New Jersey by accident. In 2014, ZPMC’ s American subsidiary was



The U.S. subsidiary team replaced the carrier car for GCT terminal users during the outbreak.

established. In just a few years, it gradually set up service outlets in Los Angeles, New Jersey/New York, Virginia, Houston, South Carolina, Florida and Seattle, and recruited managers and service personnel locally, thus realizing comprehensive localized management. “These service outlets almost cover the top 10 ports in the United States, and can radiate to all the terminals installed with ZPMC’s equipment in the United States so as to truly serve users in a timely and thoughtful manner,” introduced by Li Ming, general manager of ZPMC’s American subsidiary.

GCT Terminal, located in Elizabeth, New Jersey, is the second largest terminal in the United States. Since 2015, it was the first time for GCT to purchase new equipment via the tender. However, ZPMC’s American subsidiary had already made preparations in advance as early as in 2015. In New Jersey, ZPMC has a service team of more than 20 people, and the management personnel of the team have more than 30 years of experience in service for port machinery products. In the past five years, the team gained a very good reputation in terms of service quality and service efficiency among the local users of terminal equipment. “In fact, the user of GCT paid attention to us very early, and our cooperation with other users also made a good impression on GCT,” said Zhang Lichao, deputy general manager of ZPMC’s American subsidiary.

“To bid for the project contract, we made detailed proposals for delivering the products from pull in, unloading, power-on, debugging, commissioning to hand over of the products, and promised to provide efficient and high-quality localized services throughout the lifecycle of our products to enhance the user's confidence in our products.” After submitting the proposals, ZPMC’s American subsidiary kept active and close communication with the user through the local service team, and finally ensured to win the project.

In 2020, although impacted by the epidemic, ZPMC gave



The U.S. subsidiary sent masks to users during the outbreak.

a prominent play to its “localized service” and “localized operation” in winning the project. The user deeply realized that if it purchased products from ZPMC, ZPMC still could guarantee the delivery time even in such a severe epidemic situation. With the outbreak of the epidemic in full swing in the United States and the shortage of epidemic prevention materials, ZPMC’s American subsidiary sent surgical masks to more than 20 American users. On May 6th, 2020, Jeff Rosenberg, head of marketing of ZPMC’s American subsidiary, personally delivered 2,000 surgical masks to GCT user when logistics was locked down in New Jersey. It is ZPMC’s daily close communication with users that impresses users with the warmth that “ZPMC is always with them”.

Ushering in the 5G era of Oman’s Port

“Dinging”, a message popped up on the mobile phone screen of Yang Jun, project manager of ZPMC’s Middle East subsidiary, saying that Oman's new King Haitham Bin Tariq Al Said officially ascended the throne. “What changes will the new king bring to Oman's economy?” Yang Jun pondered.

In recent years, ZPMC's traditional port machinery and bulk cargo equipment have become saturated in the market of Oman, and the growth of its new business is sluggish. As a result, how to break the growth bottle is a difficult problem puzzling ZPMC’s Middle East subsidiary in the Middle East. One day at the end of January 2020, Yang Jun, who just came out from the terminal, saw Oman Telecom's advertisement “5G is coming” and “Automatic port equipment based on 5G technology!” on the street. An idea suddenly came to Yang Jun's mind. He decided to work with the domestic leading communication technology suppliers to promote 5G networks in Oman to organize an exchange forum on intelligent solutions for 5G city in Oman by combining the opportunity of the new king’s encouraging industrial upgrading.



The Middleeast subsidiary jointly launched a 5g urban intelligent solution forum in Dubai.

At the forum, ZPMC’s Middle East subsidiary made use of the case that ZPMC was commissioning the automatic equipment at Port of Sohar to introduce the development, technology and prospect of automatic terminal in detail to the responsible person of Oman Port Authority, and the responsible person showed great interest and invited the managers of the subsidiary to continuously introduce about it the next day. The next day, the project managers focused on promoting the automatic terminal equipment based on 5G technology. At present, ZPMC is the only port machinery manufacturer which cooperates with the communication technology supplier to complete feasibility verification of remote control of RTG in a port in China and has advantages in this field. After listening to the introduction of the project managers, the person in charge nodded frequently, showing that the promotion effect was unexpectedly good.

“The joint market development activity not only improved ZPMC’s competition threshold in Oman market but also expended the potential business of the communication technology supplier. In addition, the activity also made a planning layout for the new town of Orman in advance and opened a win-win future for three parties!” Yang Jun said excitedly.

Promoting ZPMC’s straddle carriers to “land” in South Africa

“The city is locked down!” On March 26, 2020, Shi Jun, general manager of ZPMC’s South African subsidiary got the message in Durban, South Africa. Affected by the COVID-19 epidemic, the shipping business of African ports was in a downturn, and ZPMC’s market development was facing unprecedented challenges. Due to the epidemic, ZPMC’s paid services for terminals could not be implemented. However, ZPMC’s South African subsidiary did not stop its pace but continued communicating with users through online meetings and

telephone.

As early as November 2019, TPT, a subsidiary of Transnet, started calling for bids for its straddle carrier project, and ZPMC’s South African subsidiary decided to seize the opportunity and meet the challenge. When the subsidiary was about to win the order, the COVID-19 epidemic broke out in China, and the user suggested that the epidemic would affect the production and delivery of products. “We can hold a design review meeting in Germany first, and pay a visit to the straddle carrier project completed by ZPMC in Sweden ...” Shi Jun made coordination and efforts in all aspects. Due to the time difference, the managers of ZPMC’s South African subsidiary often negotiated with the user during the day time and communicated with their domestic colleagues in the early morning. With correct business ideas and professional technical clarification, the subsidiary finally won the recognition of the user.

However, after the rigorous evaluation, the exchange rate of South African Rand to the US dollar plummeted by 30% on the eve of the user's upcoming bid. As a registered enterprise in South Africa, ZPMC’s South African subsidiary could only bid in South African Rand, and the bidding time was November 2019. Although the South African subsidiary reserved an exchange rate fluctuation margin of 5% and contacted the bank to lock up the exchange rate on margin after winning the bid, its profit would still be affected by the slumped exchange rate. Therefore, Shi Jun started a new round of arduous negotiations and took a series of measures to avoid exchange rate risks. After three months of setbacks and waiting, ZPMC’s South African subsidiary finally received the award letter for the first batch of 22 straddle carriers from the user. After winning this project, ZPMC not only broke the monopoly of its competitors in the straddle carrier market in the South Africa but also laid a milestone in the field of straddle carrier, which is of far-reaching significance to the development of ZPMC’s business. 🌐

(photo / Zhang Lichao, Yang Jun, Duan Junjian)

South Africa subsidiary is communicating with users.



Greeting the First Ray of Sunshine at Yangpu Port

by **Chen Liping**

On the morning of February 20th, Zhen Hua 32, loaded with the first batch of 8 RTG cranes and 2 RMG cranes for Xiaochantan Project, berthed at the Yangpu International Container Terminal of Hainan province.

Yangpu Port, with good natural port area, is gradually developing into an international container hub port facing the Indian Ocean and the Pacific Ocean by virtue of the opportunity of building a Free Trade Port in Hainan province. Hainan Harbor & Shipping Holding Co., Ltd., a subsidiary of COSCO Shipping, plans to invest hundreds of millions Yuan in the initial engineering capacity improvement project of Yangpu International Container Terminal, including building a new terminal yard, purchase of handling equipment, automation renovation of equipment, etc. Since mid-2019 when COSCO Shipping officially cooperated with ZPMC with the platform of Hainan Harbor & Shipping Holding, the marketing team of ZPMC has been “operating actively” and completed numerous “tours to Hainan”.

After close communication in the early stage, on one afternoon in early August 2019, Gu Haiqing, key account manager of ZPMC’s Port Machinery Business Department,

received a call from Hainan Harbor & Shipping Holding, saying that “Haiqing, please come to Hainan this week to talk about Yangpu Xiaochantan Project.” It is said that before winning a project in domestic market, you have to make full preparations in advance. Gu Haiqing and the whole marketing team knew that the meeting was of great significance. “Okay, our technicians and I will go to Hainan to have a detailed talk with you,” Gu Haiqing replied.

During this meeting, ZPMC’s team exchanged with the user about the technical parameters of handling equipment in detail. Since ZPMC cooperated well with COSCO Shipping in many domestic and foreign projects, the user affirmed ZPMC team's professionalism and dedication.

In early March 2020, one morning after ZPMC resumed work from the Spring Festival holiday, Chen Qiang, general manager of the Port Machinery Business Department received a message that “Yangpu Port project in Hainan province will officially call for bidding in April.” When he arrived at the office the next day, he said to Chen Liping and Zhang Chengjun, the former business director in charge of overseas markets: “this year, our overseas business is greatly affected

by the COVID-19 epidemic. We must actively explore the domestic market. Now we have a good opportunity for our transformation and upgrading!” Chen Liping and Zhang Chengjun gladly accepted the mission and took up the new challenge of Yangpu Xiaochantan Project.

However, due to the huge difference between domestic projects and overseas projects in terms of bidding and only two or three weeks of preparation, Chen Liping and Zhang Chengjun faced great pressure. “There are strict scoring rules for domestic projects, and the forms of bidding and bid opening of domestic projects are different from those of overseas projects. Moreover, a set of systematic solutions covering business, technology and project management are required in the bidding stage,” Chen Liping said, “more than that, some qualification documents also need to be certified by the governmental departments, which is very complicated.” Even with tight bidding time, Zhang Chengjun still led his team to Xiaochantan Wharf for on-site communication so as to closely meet the user's requirements and make full preparations.

On May 8, 2020, they went to Guangzhou to attend the bid opening meeting. At the bid opening site, they found that their bidding documents were more than 900 pages, which were the thickest among several bidders. In the end, ZPMC won the bid of 24 RTG cranes with nearly full marks. However, as there were less than three bidders participating in the bidding for the STS cranes, the user hoped to call for bid for the second time. On May 29th, the second bid opening ceremony for the 4 STS cranes of Xiaochantan project of Yangpu Port was held. Chen Liping went to Guangzhou again with thick proposals. After full preparation, ZPMC’s proposals were ranked first among three bidders. After the bid opening, Chen Liping called her daughter and said happily: “Your mom finally won!” Her fatigue from many days of overtime work now



ZPMC provides the equipment berthing wharf for Yangpu Port.

vanished completely.

“Under the new development pattern, our marketers should adapt to the new situation and adhere to doing a good job in high-end operation and active operation. Only in this way can we stand out in the fierce competition!” Zhang Chengjun said with emotion. “When we work on projects, we need to make friends with our users”, Gu Haiqing often said, “we’d better to win projects and make friends at the same time.” To this end, the three of them had many business trips to Hainan and accumulated a thick stack of airline tickets, and they cooperate with the user very happily.

The equipment for Xiaochantan Project of Yangpu Port will be shipped in three batches and all will be delivered by April 2021. After all the equipment is put into production, Yangpu International Container Terminal will become the first container terminal with automatic yard (remote control) operation capability in Hainan province, with its handling capacity up from 650,000 TEU to 1.6 million TEU. These “Blue Iron Men” will stand under the blue sky at the sea side in Hainan to greet the first ray of sunshine at Yangpu Port every morning. ☀

(photo / Chen Liping)

Hainan Yangpu Port Area.



An “Admission Ticket” from Saudi Aramco

by Fan Yilei

“Wonderful! We finally won it!” On May 22, 2020, the bidding team of ZPMC’s Saudi Aramco Shipyard Project was full of joy. Fan Yilei, commercial director of project bidding, grinned with pleasure. “ZPMC participated in bidding for five major equipment systems: launching barge, launching barge buoy, dry dock traction system, dock gate and ship lift. We won all the bids, which was a victory of ZPMC to open up the offshore engineering market of the Middle East!”

Saudi Aramco is the world's largest oil production company, and its business covers the Saudi Arabia Kingdom and all over the world. Saudi Aramco Shipyard Project, located along the Arabian Gulf in eastern Saudi Arabia, is an international comprehensive port facility project invested by Saudi Aramco. After the project is completed, it will become the largest “super shipyard” in the world. ZPMC's participation in the construction of the shipyard will have long-term and far-reaching significance for expanding its business scope, developing more types of products for offshore projects and obtaining “admission tickets” to carry out more cooperation with international famous companies in the industry.

The project team first came into contact with this project at the end of 2018. How could ZPMC stand out among so many competitors at home and abroad? The project team followed the idea of “global integrated cooperation” to work with the top professional companies in the industry to win the trust of the owner with the optimized design scheme.

Since the communication about the project spans across four countries: China, Saudi Arabia, Germany and the United Kingdom, the time difference problem tested the project team during the one-and-a-half-year bidding negotiation process.

“When we are at noon, the people in Saudi Arabia have just started to work; when we're almost off work, the people in Europe just go to office, so the clarification exchange meetings on the project were mostly held in the evening. Chinese enterprises close down on Saturdays and Sundays while the enterprises in Saudi Arabia do so on Fridays and Saturdays. In order to keep smooth communication with the owner, we have become accustomed to working at night while sleeping in daytime without weekends.” Zhang Yaming, technical

director of bidding, said emotionally.

“Saudi Aramco has extremely rigorous process for selecting its suppliers by adopting the highest standards in the industry. You must be fully prepared!” That was a goodwill reminder from the third-party experts hired by the owner who come to ZPMC to inspect the plant. From September 2019 to March 2020, Saudi Aramco conducted five rounds of inspections on ZPMC and its production bases, covering production, quality, safety, management system, technology, etc.

“How do you manage your equipment and instruments?” The assessor of Saudi Aramco asked the workshop manager at the site. The manager replied confidently: “we keep a ledger to register our equipment and instruments, number them and track the information such as validity period and status. At the same time, we regularly conduct spot check and routine check for our equipment. Whenever we find a problem, we will maintain and handle the problems as soon as possible and keep a record of status.” The assessor immediately spot-checked the record of one set of equipment, and checked equipment number, validity period and other information in the ledger and thumbed up with satisfaction, “Very good! Only stable and reliable production management system can ensure reliable products!”

“In those days, we often discussed with each other via WeChat meetings until the early morning, and everyone was still working overtime on the Minor New Year's Eve ...” Pan Kaiwen, director of bidding quality, recalled. It is with their unremitting efforts and persistence that the project team finally won the “admission ticket” to the supplier library of Saudi Aramco.

At present, the project has been fully started, and it is expected that the products will be shipped to the site in succession from the end of 2021 to the first half of 2022.

“ZPMC won the project based on the joint efforts of all its units and showed its core equipment manufacturing capabilities on the international stage. We are confident to face every challenge and complete every project successfully.” Gao Feng, commander in chief of the project, said firmly. 🌟

“Falling in Love” with Beibu Gulf

by Lu Jieling

Flying seagulls, dancing egrets, setting sun in the sea and gilded waves ... What an intoxicating scenery at Beibu Gulf! “The cooperation between ZPMC and Beibu Gulf in terms of automatic terminal started two years ago.” Tang Xuehui, deputy general manager of the Marketing Center of ZPMC Intelligent Group, still remembered it clearly.

Guangxi, as an important gate of the organically linked route of “the Belt and Road Initiative”, is the key channel connecting Guangdong–Hong Kong–Macao Greater Bay Area and ASEAN countries in Southwest China. “We have been paying attention to the seaport in Guangxi province. As Beibu Gulf Port is located in the southwest region, it has the unique advantage of connecting land and sea, and the preferential policies issued by the State will definitely benefit it first.” Tang Xuehui said.

The automatic container terminal project at No.7–10 berths of South Dalanping at Qinzhou Port of Beibu Gulf is

a key construction project for the new land–sea channel in the west of China, and it is also a key project to build the international gateway port of Beibu Gulf. It often takes several years to seek approval for the preliminary preparation for a project within a port. In the early stage, to carry out active operation and seize the opportunities of developing important strategic region of the State is the key to win projects.

In November, 2018, ZPMC was invited by the user of Beibu Gulf Port to make the layout and planning of automatic terminal. In December of the same year, Zhang Jian, vice president of ZPMC, led a team to visit Beibu Gulf International Port Group to make a preliminary docking for this project. In January, 2019, ZPMC invited the user of Beibu Gulf Port to participate in the first Digital Port Technology Forum of Automatic Terminals, which broadened the user’s understanding and expectation of automatic terminals. Since then, both sides have started close communications.

Qinzhou Port in Beibu Gulf.



Construction site of Qinzhou Port in Beibu Bay.

“At that time, we made up our mind to build automatic terminal because of an animated video made by you”, the user later explained. The video visually demonstrated the handling process of the automatic terminal and ZPMC’s analysis and conception of the “U-shaped” handling process layout. After watching the video, the user pleasantly found that the depth of the wharf of their project was very suitable for the “U-shaped” solution.

“After that, upon the request of the user, we sent senior experts from various fields to work with the user to refine the planning and layout, process flow and equipment selection.” Liu Guangyu, chief craftsman of the Planning and Simulation Department of ZPMC Intelligent Group, recalled. In 2020, from the perspective of general contractor, ZPMC’s team provided the user with “full lifecycle” professional analysis and suggestions from planning, civil engineering, equipment, project management, talent construction to operation and maintenance, etc. Cao Weifeng, manager of the System Debugging Department of ZPMC’s Intelligent System Operation and Maintenance Company, sighed: “for the whole industry, this project was the most special automatic terminal project. The scope of general contracting was very wide, and the processing set-up was brand new. It raised high technical requirements for us to provide the user with support and suggestions for the project.”

“At that time, we held technical exchange meetings basically weekly. When discussing IGV navigation mode, because the integrated navigation system had not been verified in Guangzhou Nansha Project, the user was hesitant in choosing integrated navigation system or magnetic nail navigation system. We made a list and analyzed and compared the two systems by stability, technology maturity and price. Finally, the user chose the magnetic nail mode with more reliable operation and higher cost performance,” Sun

Fei, manager of the System Integration Department of the Intelligent Software Company of ZPMC’s Intelligent Group, recalled.

Tang Xuehui was deeply impressed by the selection of STS crane mode. “Previously considering the ROI, the user preferred to adopt the solution of semi-automatic terminal with single-car STS crane and expected to upgrade the terminal to fully-automatic Terminal in the future. However, we suggested that the user of Beibu Gulf Port should directly adopt the fully-automatic solution based on dual-car STS crane and IGV. To this end, we invited a number of experts within the industry to give the user a special report from the dimensions of global industry development trend, the maturity of fully automatic terminal technology development, the risks in semi-automatic terminals, and the costs required for upgrading to fully automatic terminals. Finally, the user adopted our proposal.”

“TOS, as the brain of a port, plays a key role in its operational performance. According to the actual needs of the user, we help analyze and compare the mainstream TOS brands in the market from more than ten dimensions, and the user was satisfied with the reference data provided by us.” Liang Haiyu, deputy general manager of ZPMC’s Intelligent Software Company, said.

After many investigations and comparisons, Beibu Gulf Port became the world's first port which chose U-shaped layout scheme combined with ZPMC’s systematic operation and maintenance, IOC, TBI, etc. Finally, through the joint efforts of the teams of both sides, the solution in the “animated video” for Qinzhou Port Automatic Terminal Project was further refined to the Beibu Gulf Solution featuring dual-car automatic STS crane system + dual-cantilever RTG yard system + IGV horizontal transport system. On September 30, 2020, the two sides signed a project contract. This project is not only a project adopting “one-stop solution” designed by ZPMC from the top level but also China’s first automatic sea-rail intermodal terminal jointly built by the two sides.

“The project of Beibu Gulf Port represents the efforts of ZPMC to actively explore the domestic automatic terminal market. It is also the most important project built by ZPMC during its strategic transformation from a single equipment supplier to a system integrator. We will work with the user to build China’s first automatic sea-rail intermodal transport terminal, and help Beibu Gulf to develop into an international gateway port. At the same time, we will contribute ZPMC’s solution to the upgrading and iteration of global automatic terminals,” said Tang Xuehui. 🌐

(photo / Lu Jieling)

“Delivering” ZPMC’s “Promises” around the World

by Liang Siliang, He Wenyong and Liang Ming

“Thanks so much for their performance for our project. I have no doubt that it would not have been the success without their work.” At ZPMC, there are many delivery teams going overseas with the port equipment sold all over the world. They have overcome the difficulties and obstacles caused by epidemic, region, language and culture, and successfully completed the equipment delivery task with more than expected performance. The commendatory letters from customers sent from overseas markets witness their efforts. Although they work all over the world, their work clothes have the same logo: “ZPMC”.

Head to Le Havre, France

On July 31, 2020, the “fully armed” 17-member delivery team for the 4-STC crane project of Le Havre GMP Terminal set off from Shanghai for France. Due to the impact of the epidemic outbreak, the delivery team reduced its member by 3 compared with the original plan. During the delivery, the team members strictly took personal protection measures during the epidemic to reduce the risk of infection.

During the unloading period, Liang Siliang, deputy leader of the delivery team, together with the workers, stood on the top of the elevator car of STS crane in the storm and strong wind. They manually rose the elevator by half a meter every time to check and recover the elevator cables that were blown out of the cable grooves during shipping. After several tests and adjustments, the elevator running from ground to the height of 45 meters could finally operate with temporary power supply before the high-voltage power supply was connected, which greatly improved the efficiency of dismantling lashing and other work.

Because the coastline of the port is very long, from laying cables for the new equipment to the high-pressure pit of the terminal, the 17 people on site had to carry a total of 8 tons of cables, with 1.9 km walk in total. Using their rich experience and combining with the existing equipment at the terminal, Liang Siang, Shao Yongjun, Liu Menglin and other people designed a cable laying scheme by which it only took 5 hours for the 17 people to complete the laying task of 4 tons of cables into the pit with nearly one-kilometer travel distance.

After the high-voltage power was supplied, the French user required the French Special Equipment Supervision

and Inspection Institute to inspect the STS crane elevator and car before the delivery team used it. In the past, the application for these inspections was conducted by professionals, but they did not come this time due to the epidemic. With their solid electrical knowledge, the team members completed all the tests of the elevator and successfully passed the inspections. In addition, during the use of the elevator car, they debugged the fault and ensured the smooth delivery of the STS cranes.

Seventy-nine days later, the delivery team successfully completed all the delivery tasks from ship unloading to durability test.





“Young” STS cranes at Kuantan Port

On October 31, 2020, “Zhen Hua 29” shipping two brand-new STS cranes made by ZPMC arrived at Kuantan port, the most important port and logistics hub on the east coast of the Malay Peninsula. This immediately attracted the attention of the local media, as it was the first time that STS cranes from ZPMC entered the container terminal of Kuantan port.

The original four STS cranes at the terminal are nearly 20 years old, so it is urgent for the user to put two new ones into operation as soon as possible. On the second day after the quarantine, the delivery team, led by the delivery team leaders Najib and He Wenyong, devoted themselves to the function restoration and

commissioning of the STS cranes.

November was the local rainy season. It rained heavily one or two times a day, and the rain always came unexpectedly when the installation and commissioning work was in full steam. He Wenyong, together with electrical engineers Wang Dong and Yi Pengfei, struggled to cover and protect the electrical equipment in the pouring rain, and often got soaked all over. Once the rain stopped, they rushed back to work. In the burning sun after the rain, they couldn't tell whether the water on the body was rain or their sweat, but no one uttered a word of complaint. The delivery team often worked overtime even after 9 p.m., just to regain the progress delayed by the heavy rain.

In order to put the new equipment into operation as soon as possible, the user specially proposed to change the 16-hour durability test of lifting containers in simulation to directly lifting actual containers from a cargo ship. In order to ensure the normal operation of the two STS cranes and solve the problem that may appear any time, all electrical engineers in the delivery team were on standby. In actual operation, the two electrical engineers, Wang Dong and Yi Pengfei, stayed on the STS cranes to observe their operation status all the time and adjusted and modified their work conditions in real time according to the actual working habits of the user's driver. After nearly 24 hours of continuous operation, the two “young” STS cranes lived up to expectations, and made their debut with a perfect “zero failure rate” during handling the real cargo ship. On December 10, 2020, the two STS cranes were delivered to the user. It only took 39 days for the team to complete the delivery from unloading to final acceptance. The good conditions of the equipment and the professional and efficient performance of the delivery team were highly recognized by the user.



A delivery story in Sokhna, Egypt

Sokhna Port, located at the south entrance of Suez Canal, is a modern comprehensive container hub port. The user first purchased 4 STS cranes and 2 RMG cranes from ZPMC. Therefore, the delivery team was mainly responsible for the delivery of 4 STS cranes this time.

At the site of Sokhna Port, dust storms can be seen almost every day, water and power supply are frequently cut, and wireless networks become a luxury dream. Apart from the test from the tough environment, the delivery team also had to suffer from the psychological temper. Even so, ZPMC's engineers never complained about it. They often said that going abroad for delivery at this special time would demonstrate the image of Chinese people and ZPMC, and it was necessary to strictly implement ZPMC's epidemic prevention regulations and complete every task successfully.

In early December 2019, Wang Shaohua, head of the delivery team, Liang Ming, electrical engineer and others came to the terminal and immediately held a meeting with the user to discuss the plan of unloading the ship and connecting the high voltage power supply. In order to seize the time, the team only had a one-day holiday on the first day of Chinese New Year. During the delivery period, they overcame the difficulties such as the unfinished high-voltage power infrastructure of the terminal, the unstable high-voltage power supply of the new terminal, and the early evacuation of foreign commissioning engineers from the suppliers due to the epidemic. In early March 2020, they basically completed electrical commissioning of the main functions of the STS cranes and delivered the first STS crane at the end of April. For the following work, electrical engineers Wu



Dongjian, Feng Gong and Zhou Congce went to Egypt to continuously participate in the delivery work.

The Egyptian had very high requirements for STS cranes. They required that no fault should be found and reset was not allowed. At the same time, due to the evacuation of foreign commissioning personnel of the electronic control system supplier, part of the electronic control debugging and durability of the three sets of equipment at the site were not been completed. Apart from doing their own job well, they also shoulder the heavy responsibility debugging the electronic control system. By strengthening the remote contact with the personnel of the electronic controller, several parts of the original program were optimized and upgraded, ensuring the smooth completion of the durability test.

By the end of November 2020, the epidemic situation at Sokhna Terminal was getting worse and worse, but it was in the critical stage of the durability test of the STS cranes. The team at the site strengthened epidemic prevention and control efforts and insisted on going to work every day. After the last few months of hard work, all four STS cranes passed the durability test in perfect condition, and both the operation of equipment and the work of the team were fully recognized by the user. Shortly after the delivery, the user placed another order for 10 STS cranes with ZPMC for Saudi Arabia, and also sent a thank-you letter to ZPMC, praising the excellent performance of the field team in the delivery work.

(photo / Liang Siliang, He Wenyong, Liang Ming, Na ji)



ZPMC's Footprint toward East Timor

by Liu Qi

“If we win this project, we will bring our flagship products to East Timor for the first time. This means that our products will enter the 104th country and region, which is of great significance and we must go to all lengths,” said Huang Hua, head of ZPMC's bidding team for Timor Port crane project. From the first email from the user at the beginning of 2020 to the technical and commercial solution negotiation stage of the project, the bidding team never dared to relax for a moment.

Timor Port is operated by French Bolloré Group. So far, ZPMC has provided more than 40 port cranes for Bolloré's terminals in Guinea, Côte d'Ivoire, Benin, Sierra Leone, Togo, Congo (Brazzaville), Ghana and other countries.

In 2017 when the French user started to build the infrastructure in Timor Port, it inquired ZPMC about the general equipment technical proposal. In early 2020, the user sent the first email about technical details to ZPMC, which increased the bidding team's confidence. “It meant that, by comparison, the user showed interest in us,” said Huang Hua.

Due to the time difference, the working time of the French user just coincided with the closing time of the bidding team, so it was common for the bidding team to have a meeting in the evening. The head of the bidding team must take along the computer loaded with all the technical data after work every day, and the other team members had to keep their mobile

phones on for 24 hours so as to have a meeting at any time.

“Hey, Lao Jin, stop eating, the user hopes to hold a meeting to discuss a technical problem,” Huang Hua called Jin Haoping, mechanical engineer of the project, at one evening. “No problem, I'm online soon,” Jin Haoping answered. It turned out that the user had doubts about whether the wheel pressure after the delivery of the STS cranes would damage the terminal ground. Huang Hua and Jin Haoping quickly confirmed the relevant parameters and found that the data was correct. After their patient and detailed explanation, the user removed its doubts. After the meeting, it was eleven o'clock in the evening. “It doesn't matter for me to go to bed later. The problem has been solved. Everyone can sleep better at night,” joked Huang Hua.

From then on, the communication between the bidding team and the French customer gradually became normal. In May 2020, the two sides finalized the technical plan and were ready to start the business negotiation. However, due to various reasons, the contact with the French user was cut off.

“At that time, everyone was very nervous. We were afraid that all the work we had done would be wasted, and we had to sort out and improve the business plan unilaterally.” Four months later, as the epidemic situation at the user's site eased, the bidding team resumed contact with the user again and the two sides soon entered into business negotiations.

“In the whole bidding process, the business negotiation

is the final step before signing a contract. We have to do all work very carefully,” said Huang Hua. According to normal procedures, the bidding team would travel to Timor Port of Timor-Leste during this stage to examine the port environment, water depth and other factors to reduce the risk of the contract. But the global epidemic was raging, and the bid team had no hope of going abroad, so they had to find another way. “We can't go to the site ourselves, but the locals can.” The bidding team found a local agent and conducted a “cloud investigation” from the perspective of the agent. The by using the data collected from the Internet and feedback data from the user, the bidding team mastered over 60 items in a week, further improving the technical and business plan.

In November 2020, in order to show sincerity and deepen the user's understanding of ZPMC, the bidding team invited Stephane, representative and CEO of Bolloré Group in China, to attend ZPMC's annual exchange forum

on intelligent terminal solutions. “I am very shocked by the new technologies and new ideas you released. I will report my experience to the headquarters as soon as possible and achieve our cooperation as soon as possible,” said Stephane after learning about the new technologies released by ZPMC.

In December 2020, the two sides successfully signed the procurement contract, and ZPMC officially won the bidding for the project of 2 Post-Panamax STS cranes and 4 electric RTG cranes for Timor Port. Even affected by the outbreak of COVID-19, the successful bidding greatly boosted ZPMC's confidence in overseas markets and overseas businesses.

“The next step is to build the equipment. We have to remain humble and do well in our own work so that after the project is delivered in 2022, our products will truly stand on the territory of the 104th country and region, helping handle containers in Timor-Leste,” said Huang Hua with certainty.

(photo / Huang Hua)



Port Timor is under construction.

“Iteration” of “Central Nerve” of Jack-up Drilling Platform

by Xu Huan

After upgrading, the jack up drilling platform is used for dynamic lifting test.

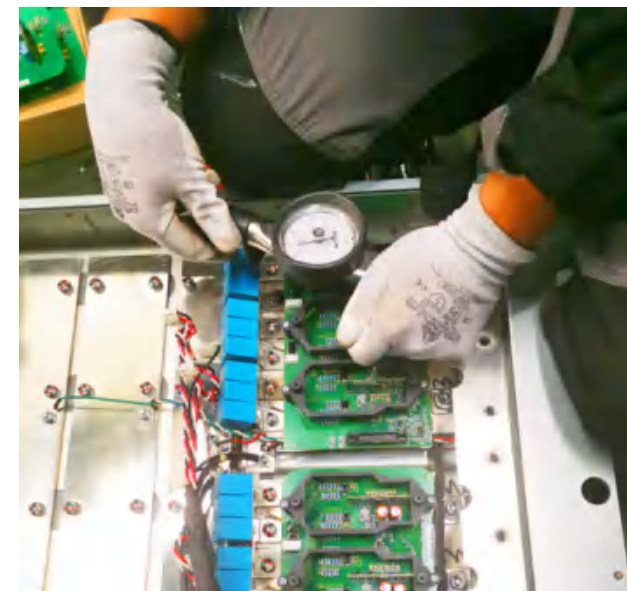
In recent years, the offshore marine engineering equipment has developed rapidly, and jack-up drilling platforms have stood up one after another in the vast sea, of which the electronic control lifting system, core component of these platforms, can be called the “central nerve”. ZPMC has been committed to the upgrading of the lifting system since it realized its localization through independent research and development more than a decade ago.

With the application and popularization of lifting system on various jack-up platforms, the feedback data can gradually “tell” designers a lot of information. After years of data collation and comparison, designers have found a “false alarm” in the lifting system since 2015. “False alarm” is caused by the special working condition of the jack-up drilling platform, especially when the system is in “sleep” for a long time and the objective conditions such as high humidity at sea, if the equipment lacks systematic maintenance, it may show the phenomenon of false alarm and its lift system will stop running. Once stop running, the platform position will be locked. ZPMC’s R&D team decided to further optimize the performance of the lifting system and “iterate” it.

The offshore jack up drilling platform is usually supported by three legs and equipped with a total of six lifting system modules, which are distributed in the electrical control room of each leg. When the “false alarm” phenomenon occurred in the past, the lifting system module had to be replaced, which was a huge workload. In case there was no replaceable module available on the platform, the module had to be transported from land, which would prolong maintenance cycle and reduce efficiency. The task of solving this problem fundamentally fell on the shoulders of Hu Wenjia, deputy director of the Institute of Offshore Engineering of ZPMC.

“To solve this problem, we cooperated with the user and took an actually operating platform as the research pilot. After several rounds of verification, we confirmed that the false alarm was related to the measuring board in the lifting system.” The measuring board acts as the “monitor” in the lifting system, and its role is to compare whether the received parameters are consistent with the transmitted and output parameters. Once a problem occurs to the “monitor”, even if there is no actual external fault, it will send out a fault alarm, and then lock the lifting system and stop the platform in operation. “In the operation of the platform, data changes rapidly, and every component should ensure its reliable and stable operation,” Hu Wenjia explained,

“it will cost at least 300,000 yuan to replace a module, while it will cost only few thousand yuan to replace a measuring board.” In order to reduce the operational risks of offshore platforms and to consider the economic interests of the user, the R&D team sent the measuring board in fault to the laboratory for data analysis and tracking. During this period, the team had meetings with suppliers to discuss the



The staff are replacing the measuring plate torque calibration of the equipment.

materials used for the boards. Finally, the more stable “884E” measuring board was released in 2019.

However, the workload of sending the whole lifting system back to the workshop for replacement of the measuring board from each sea area is too large, while the on-site replacement is extremely difficult for non-professionals, and improper replacement will cause damage to the system. At the beginning of 2020, ZPMC’s team reached an agreement with the user to upgrade four sets of lifting systems. To this end, Hu Wenjia and two equipment engineers went to the site and replaced 144 measuring plates. At the same time, they did deep maintenance on the lifting system and gave systematic training to the user. After a number of static and dynamic tests, they smoothly completed the upgrading and transformation of the platform. “When we find the “lesion”, we only need to pick up ‘scalpel’ to cut it off,” said Tang Junjie, R&D engineer of ZPMC’s offshore engineering institute, who participated in the upgrading and transportation. One year later, the user gave feedback that the stability of the system was guaranteed, and the phenomenon of false alarm was basically eliminated.

“The smooth upgrading of the lifting electronic control system could not be done without the support and cooperation of the user. When we helped the user solve practical problems, we have a sense of accomplishment,” Tang Junjie said, “there is no end to the iteration of the equipment. We will continue to improve relevant technologies and contribute ZPMC’s strength to achieving the strategy of building China a maritime power.”

(photo / Hu Wenjia)

“Colorful” Unmanned STS Crane

by **Hu Ping**



"Colorful shore bridge" is ready to go.



Equipment arrived to the shore.



Equipment unloaded.

On the coastline of Tianjin Port, there are 6 blue “steel giants”, wearing “ties” in red, orange, yellow, green, cyan and blue on their chests, making the port more beautiful.

They are tailored “colorful STS crane” built by ZPMC for the intelligent container terminal in Section C intelligent container terminal of Beijiang of Tianjin Port. Their clothes are amazing, and their strength are even impressing. “The most important innovation of these STS cranes lies in the cancellation of the driver's cab and the realization of fully automatic operation on the land side. Therefore, it is called the most advanced fully automatic single car STS crane in the industry at present,” said Gu Jianrong, project manager of ZPMC.

In the past, when STS crane grabbed containers and put them on automatic guided transport vehicles or trucks, drivers had to carry out the operation of landing containers manually. With the speed-up of intelligent port construction, more and more automatic equipment has been adopted to reduce the burden of dock workers. Rotterdam Port in Holland and Yangshan Port in China were the first to cancel the driver's

cab of dual-car STS crane. “The driver in charge of remote control sits in the spacious and bright central control room and monitors the entire operation process on the computer screen. They do not need to work high above the ground!” Lu Jia explained, “as for the project of Section C in Beijiang intelligent container terminal of Tianjin Port, automation was further advanced, and the real fully automatic unmanned control has been realized.”

In order to meet the new expectations of Tianjin Port for “colorful STS crane”, ZPMC’s project team kept innovating and finally decided to tailor a fully automatic single-car STS crane without driver's cab for Tianjin Port and creatively realize one-key container operation on the land side.

“The driver's cab is designed for local operations. However, when a driver's cab is equipped, the movement of STS crane will affect the stability of the cab. Considering the safety of the driver's work, the acceleration and deceleration of STS crane will be limited to some extent. Now the cancellation of driver's cab can reduce the restriction to STS crane and

effectively shorten the entire container handling cycle.” Lu Jia added, “in fact, there is a precedent of canceling the driver's cab of dual-car STS crane, but to cancel driver's cab of a single-car STS crane is very rare.” In addition, previously STS crane without driver's cab needs manual remote intervention control on the land side. However, through scientific control of lifting load, real-time scanning and guidance of targets on the ground as well as precise positioning function of lifting appliance, the STS crane in Section C intelligent container terminal of Beijiang of Tianjin Port (Phase I) finally realized full automation and unmanned operation on the land side, which promoted the remote control of unmanned and automatic driving technology of STS crane to be used in Tianjin Port.

The use of new technology is always accompanied by difficulties and challenges. The brand-new upgrade of the model, especially the cancellation of driver's cab, means that the mechanical structure and electrical system of the equipment have to be carefully considered and adjusted. But time waits for no man. “It can be said that the automatic terminal project is the one with the shortest construction period that ZPMC has built so far.” Lu Jia pointed out the challenges inside and outside the project team.

In order to advance the plan according to the time node, the design team gave up their rest period voluntarily and worked overtime to optimize the design drawings. Due to the COVID-19 epidemic, many of the seminars were transferred online, and everyone made full use of all available time to catch up with the project schedule. The first draft of the design was completed in just a month or more. To help the user make better decisions, the project team also set up a 3D modeling team to facilitate the rapid landing of new models through digital solutions.

With unrelenting efforts, ZPMC’s team made a new record of the speed of “launching colorful STS crane” project: the assembly of the first STS crane was completed in two months, the first batch of STS cranes were shipped in six months, the single-unit function of the first batch of STS cranes were restored in one week, the remote control of the equipment was realized in four weeks, and the docking and joint debugging of the terminal production operation system and equipment control system was realized in 45 days...

On January 17, 2021, the joint commissioning and test of Berth 1 of the intelligent container terminal in Section C of Beijiang port area of Tianjin Port was successfully realized, and the six STS cranes provided by ZPMC debuted amazingly.

“The good operation of the equipment also helped us to win the order for 6 STS cranes for the intelligent container terminal (phase II) in Section C of Beijiang Port area of Tianjin Port, and now the construction for the new orders has also started one after another!” said Gu Jianrong with a smile. ☺

(photo / Ji Xueqing Lu Qingnian)

Guardian Angel's Smile

by Wang Shengnan

“Thank you for helping the children to make a move!” the nurses at Lubinghua Orphanages were full of gratitude, looking at the busy “blue vest” volunteers of ZPMC who were helping removing the house to new site. As a public welfare project under the Western Children's Relief Fund of CCAFC, Lubinghua Orphanages mainly treats and cures orphans and disabled children who are abandoned by their parents because of their congenital diseases. Five years ago, ZPMC and Lubinghua Orphanages met ZPMC by accident. The volunteers have been guarding the smiles of the angels for years. This time, when Lubinghua Orphanages moved to another location, the volunteers came to help timely.

“Do you still know me, Sijia?” On the day of moving, volunteer Cai Jiajun immediately recognized the fat little girl, Li Sijia, who had suffered from severe hydrocephalus. Li Sijia arrived at Lubinghua Orphanages on July 4, 2017, and was sent to SCMC for treatment the next day.

“She was in a critical condition with tubes all over her body and required 24-hour attention.” But Lubinghua Orphanages was short of hands, and only one nurse stands at the side of Sijia, and she was too busy to have time to eat. Therefore, the volunteers from ZPMC make use of their rest time at noon and night to go to SCMC with two people in each shift. They sent food to the nurse and took milk and fruit to take care of Sijia. Such visits continued for a month until Little Sijia was discharged from the hospital. Little Sika now is over three years old. When she sees the volunteers once taking care of her, she would reach out her hands for “holding her”.

“Although hydrocephalus affected her intellectual growth, fortunately the disease was cured. I hope some kind-hearted people can foster her and let her feel the warmth of family life,” said the nurse of Lubinghua Orphanages.

In addition to Li Sijia, many other sick children have



Volunteers of ZPMC are with children in lubing flower house.



ZPMC volunteers went to lubing flower house for volunteer service.

been sent to hospitals in Shanghai for treatment. ZPMC sits close to the SCMC, so it is contracted to take care of the children from Lubinghua Orphanages. As long as there are children taking medical treatment, the staff of Lubinghua Orphanages will contact ZPMC's volunteers. Apart from ZPMC, there is a backup force near every hospital.

After treatment, the children will temporarily return to Lubinghua Orphanages for recovery. Lubinghua Orphanages will find adoptive parents for the children who will accept them. The volunteers will also visit the nursing house from time to time, do some volunteer services and accompany the children to play. “Among these children, there are babies with down’s syndrome, babies with cleft lips, and babies with hearing impairment.... This little boy, we call him “Dabao”, once suffered from congenital heart disease,” said Cai Jiajun, pointing to a photo in his phone. After recovering from his illness, Dabao became a smart, healthy baby and everyone loves him very much. Originally, a Chinese couple wanted to adopt him, but because they did not meet the conditions for adoption, he had to be adopted by an American couple. Not long ago, Dabao's Chinese adoptive parents flew to the United States to visit him. What volunteers saw and heard in their services made them feel the true love of the human beings.

The charity sale in March every year is another measure taken by ZPMC to help sick children. The kind-hearted people in ZPMC will help the children in this way. “In the future, we will continue to pay attention to Lubinghua Orphanages, and we hope that every child will be healthy and strong,” said Cai Jiajun. 图

(photo / Wang Shengnan)

Yangshan Phase IV Project Co-built by ZPMC Wins Luban Award

Recently, the first batch of projects selected to be granted with “Luban Award of China Construction Engineering (national quality project) 2020–2021” (“Luban Award”) organized by China Construction Industry Association were announced, and Shanghai International Shipping Center Yangshan Deep Water Port Phase IV Project, co-built by ZPMC, was on the winner list.

As an important part of Shanghai International Shipping Center, Yangshan Deep Water Port Phase IV project covers an area of 2.2316 million square meters, and is equipped with 26 automatic STS cranes, 119 automatic RMGs and 135 AGVs. It took the project 4 years to pass the acceptance inspection, which achieved the leap from the traditional container port operation in China to the automatic intelligent operation mode, marking that the design technology concept of automatic container port area, civil construction installation, handling process equipment, production system control and other fields of China have reached the world's leading level.

ZPMC has applied a large number of innovations in Yangshan Deep Water Port Phase IV project, the world's largest single container terminal with highest automation level so far.

The world's first remote control super large automatic dual

lifting and dual-car STS crane, automatic full series RMG and the world's first automatic dual-container high-speed RMG realized the intelligent, safe, environmentally friendly and efficient operation in the whole lifecycle of the equipment. ZPMC’s self-developed replaceable lithium battery all-electric unmanned heavy-duty AGV and large-scale fleet management system have greatly improved the operation efficiency. ZPMC’s self-developed ECS for automatic container terminal is perfectly integrated with TOS, which overcame the technical problems such as equipment capability, planning control, coordination of scheduling and execution in the whole process of large-scale automatic terminal operation, so as to realize real-time monitoring and dynamic adjustment of operation status and maximize operation efficiency.

At present, ECS system has been fully applied in Shanghai Yangshan Phase IV Fully Automatic Container Terminal, ZPMC has also promoted the system to Guangzhou Nansha Phase IV Automatic Container Terminal, Qinzhou Port of Beibu Gulf of Guangxi, Port of Salvador in Italy, Khalifa Port in Abu Dhabi, Port of Morocco, Haifa Port in Israel and other automatic terminal projects.

ZPMC Signs a Container Equipment Procurement Contract with Hainan Harbour & Shipping Holding

On February 7, ZPMC and Hainan Harbour & Shipping Holding Co., Ltd, a subsidiary of COSCO Shipping Group, held meeting in Haikou and signed a container equipment procurement contract for Haikou Port Container Terminal Capacity Enhancement Project (Phase I).

COSCO Shipping Group is an important strategic partner of ZPMC for a long time, and the two sides have carried out in-depth cooperation at many terminals at home and abroad. In 2020, the two sides, by overcoming the impact of the global epidemic and other adverse factors, successfully signed a number of overseas projects such as the PCT STS crane in Greece, the PPA STS crane and RTG in Greece, and signed 4 quayside container cranes and 24 yard cranes of Xiaochantan, Yangpu Port in China. The successful signing of the Haikou Port Project further extended the close and friendly strategic cooperation between the two sides. The cooperation also includes light STS crane and RMG, which adopts the innovative design of semi-circular girder structure (ZMH) with low wheel pressure, energy saving and consumption reduction and other features.

The First Intelligent Container Cleaning System in China Accepted and Put into Operation



Recently, China’s first intelligent container cleaning system built by ZPMC for Shanghai Laogang Waste Disposal Co., Ltd. Has been officially put into use after on-site acceptance by a team of experts.

The new container cleaning system made by ZPMC is intelligent, efficient, safe and environmentally friendly. Based on the field application conditions, the project is equipped with six functional modules, such as container truck guide system, container plane transportation system, detergent coating system, cleaning system, waste water treatment and utilization system, and cleanliness detection system. With the central control system, the intelligent processing of container truck separation, cleaning, identification, data sharing and other intelligent processing are realized, and the washing speed is 100 seconds per container, 15–20 times faster than traditional manual cleaning, achieving both economic and social benefits. The technology has been granted an invention patent.

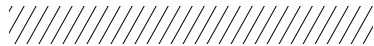
The State Council Issued Guiding Opinions to Promote Green and Low Carbon Ships

Recently, the State Council officially issued the Guiding Opinions of the State Council on Accelerating the Establishment and Improvement of Green and Low-Carbon Circular Development Economic System (the Guiding Opinions). The Guiding Opinions put forward that establishing and improving the green and low-carbon circular development economic system and promoting the comprehensive green transformation of economic and social development are the basic strategies to solve the ecological problems of China's resources and environment.

The Guiding Opinions has deployed the key tasks in six aspects, namely, improving the production system, circulation system, consumption system, accelerating the green upgrading of infrastructures, building a

market-oriented green technology innovation system and improving the legal and policy system of green low-carbon circular development.

In terms of improving the circulation system of green and low-carbon circular development, the Guiding Opinions calls for developing green logistics, promoting green and low-carbon transport means, and eliminating, updating or renovating old vehicles and ships, strengthening the promotion of green ship demonstration application to promote inland river ship type standardization, speeding up the construction of port electric facilities, etc., deepening cooperation in green “Belt and Road Initiative” , and expanding cooperation in technology, equipment and services in energy saving, environmental protection and clean energy.

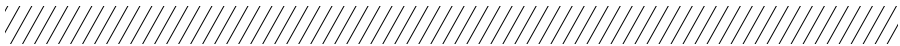


2020 Global Offshore Wind Power Data Released, with China taking the Lead Again

On February 25, the latest data analysis released by the Global Wind Energy Council showed that more than 6 GW new offshore wind capacity was installed globally in 2020, second only to 2019. China took the lead in the world for three consecutive years, with more than 3 GW new capacity, accounting for more than half of the world's new capacity.

In 2020, the newly installed capacity of offshore wind power in China exceeded 3 GW, accounting for 50.45% of the newly installed capacity in the world. The total capacity of offshore wind power of China exceeds that of Germany and is second only to the UK, making China the second largest offshore wind power market in the world.

Europe grows steadily and accounts for most of the rest of the new capacity. Specifically, Netherlands has nearly 1.5 GW of installed capacity, second only to China, and Belgium (706 MW), the United Kingdom (483 MW) and Germany (237 MW) all have new installed capacity. The new floating offshore wind capacity only comes from Portugal (17 MW).



Range over 26,000 Nautical Miles! China's Self-developed “Yuanfuyang” VLCC Delivered

It is informed that “Yuanfuyang” ship, the third largest DWT international ship, registered in China after “Yuanhuayang” and “Yuanguiyang” , has been registered at “China Yangpu Port” . Thus, in the international crude oil shipping market, “China Yangpu Port” has its own “troika” with capacity of more than 300,000 DWT. This is also the fourth international ship registered at “China Yangpu Port” since 2021. As of February 26, a total of 26 international ships have been registered at “China Yangpu Port” .

According to the information, “Yuanfuyang” ship is the third energy-saving and environment-friendly silt-proof VLCC series products tailored by Dalian Shipbuilding Industry Co., Ltd. for COSCO Shipping Energy Transportation Co., Ltd. The ship is 333 meters long, 60 meters wide, with maximum load capacity of 319,000 tons. a range of more than 26,000 nautical miles, and can sail around the world. The ship has a straight bow design profile, with energy-saving guide wheel equipped in front of the propeller, which has obvious energy-saving effect. The daily fuel consumption of the ship is the least among ships of the series, which shows excellent energy-saving and environmental protection performance and reduces operating costs greatly. It is a sister ship of the “Yuanhuayang” and “Yuanguiyang” , which were delivered last year.

According to the information, considering the limited water depth of Malacca Strait, the ship is designed with a draft of 20.5 meters, so that even normally loaded with 2.2 million barrels of crude oil it can directly sail through Malacca Strait without waiting.