

Mr. Fang Li, a Pioneer in the Great Era

方励——伟大时代的弄潮人

—— Interview with Mr. Fang Li, the President of Laurel Technologies and Laurel Films

—— 访劳雷工业公司总裁、劳雷影业公司总裁方励先生

□记者 刘新洁

我是一个充满好奇心的人。好奇心让我不断探寻新的未知。在地球探测和海洋调查领域，我们不断研发新的技术；在电影制作领域，不断完善电影工业生态产业链，积聚培养创作人才，希望有更多的好电影留下来。创业26多年来，我始终信守承诺。对地球和海洋科技有承诺，要一辈子在这两个领域不断创新，挑战自我，让我们对大自然有更新更深的认识；对电影有承诺，要用全部的心血和情感去创作去制作，记录我们的时代，留下我们的脚印，为观众送去更多有意义的电影。”说这番话以及为此写下完美注解的是劳雷工业公司总裁、劳雷影业公司总裁方励先生。



劳雷工业公司总裁、劳雷影业公司总裁方励先生
Mr. Fang Li, the President of Laurel Technologies and Laurel Films

做了这样的总结。“我们先后并购了比利时的无人直升机公司，收购了美国加州水下机器人公司，把人的感官远程送到人去不了的地方，把人类触角伸的更远。”据了解，2010年方总全资收购位于美国加州硅谷的水下机器人公司，Deep Ocean Engineering, Inc.；2012年并购比利时的Flying-Cam无人直升机公司，实现了劳雷“远程、无人、遥测、遥感”的战略布局。

推出全球第一款航空煤油动力远距大载荷无人直升机。“我们最近投入大量资金，在我发起定义的技术性能指标框架下，Flying-Cam技术团队研制出一款10~30公斤载荷，1~3个小时续航能力，150公里/小时飞行速度，可供船上起降的远距大载荷的燃油动力轻型无人直升机，可搭载各种传感器，可在船上起飞降落。Flying-Cam是世界上第一家提供专业无人直升机航拍的公司，30年来它的无人直升机系统不但被运用到电影拍摄中，还被用于激光扫描

描三维地形测绘，图像摄影数字3D建模等，先后斩获了两届奥斯卡、



方励主持研制的H-3000型无人自主海洋测绘艇。
H-3000 Hydrographic Survey ASV designed by Fang Li.

作为全球领先的科学探索仪器系统综合服务提供商，方总在1992年创立了劳雷工业公司，专注地球物理勘探及海洋科学调查领域。一直敢为人先的方总，26年来，不断为人类提供了近距离研究地球和海洋提供了各种可能。保持好奇，专注专业，这是方励与劳雷坚持对世界的探索精神。同样，对电影也充满好奇的方总在2000年创建了劳雷影业有限公司，完成了多部有影响力的电影作品。正如方总所言：“在瞬息万变的今天，我一直处于兴奋与敏感、预判并识时务，一直追寻着时代的前沿，见证着时代的发展，见证着中国电影产业的崛起。我沾了时代的光，我是个完整的受益者。”

时隔八年回访 劳雷工业探索永无止境

本刊曾在中国改革开放20周年、30周年、中国加入世贸10周年都曾采访过方总。时隔八年，在中国改革开放40周年之际，本刊记者再次回访方总，可以说，方总是中国改革开放的见证者，而本刊则有幸成为方总事业发展的见证者。在犹如老友重逢的喜悦中，第四次与方总的对话在劳雷奇幻的电影工厂里愉快地展开。

并购无人直升机公司，收购水下机器人工厂。“这些年，我个人变化最大的就是过去以推广技术和销售技术为主，现在以研发技术为主，从市场活跃转变为工厂活跃，在无人远程、遥测遥感的机器人、无人机领域做回科学家和工程师。”谈到劳雷工业的变化，方总首先



方励与他控股的比利时Flying-Cam无人直升机公司技术人员在舟山群岛进行超轻型无人直升机载三维激光扫描岛礁测绘演示。
Together with his technical team from Flying-Cam AS in Belgium, Fang Li is demonstrating island survey by 3D laser scanner loaded on their ultra-light unmanned helicopter in Zhoushan.

一届艾美的科学与工程技术奖。”方总投全资并主持研发这款无人直升机遥测遥感系统无疑也成为劳雷八年来的荣耀。据悉，在2018美国国际无人系统暨无人机器人展上，Flying--Cam首次发布的该款远距大载荷智能无人直升机，成为展会的一大亮点，是全球遥测遥感轻型无人直升机的一颗新星。

牵头和参与国家五个海洋863科研项目。劳雷是中国改革开放的参与者和见证者，劳雷在地球物理勘探、海洋调查仪器装备领域都是业界名副其实的领头羊。方总作为留创人员所创立的留创企业，北京南风科创应用技术有限公司，先后牵头和参与了国家五个海洋863科研项目——深海倒置式压力回声仪研制、复合动力快速无人艇海洋环境监测系统、波浪滑翔器无人自主海洋环境观测系统、作业型ROV产品化技术研发、全海深多波束测深系统工程化研究及应用示范，方励先生把他多年的科技知识和工程经验贡献给了中国海洋事业。特别值得称道的是，去年当选为中国海洋学会海洋技术装备专业委



方励主持研制的DeepOcean X8深海作业级电动水下遥控机器人。
DeepOcean X8 Electrical Work Class ROV designed by Fang Li.

员会副主任委员的方总，发起并推动在2019年5月的中国海洋技术大会同期诞生第一届OT海洋技术装备展（Ocean Technology, OT），建立中国自己的海洋科技展览品牌。

与加拿大CMG公司在华成立合资企业，专注制造航空地球物理测量仪器系统。出于对地球物理的长期热爱，方先生于2017年与他的合作伙伴加拿大CMG公司（Canadian Micro Gravity Ltd.）在上海成立了合资企业：上海南风精密仪器有限公司（Laurel-CMG Geophysics Ltd.），制造适用于无人平台的小型航空和海洋重力仪器系统及直升机载航空时间域瞬变电磁勘探系统。凭借36年的航空地球物理测量仪器市场应用经验，方励先生在未来的十几年里，将致力于在中国生产制造航空地球物理勘探仪器系统。

组建新的科技公司和团队。方总在采访中多次向记者表达了他的创业理念，他说：“把兴趣和爱好转换成生存手段，和自己喜欢的人一起做喜欢的事，这是最幸福的。当你快乐地去建立一些新的模式和创意，然后分享给更多有共同爱好的人，这就做成了商业模式。”这些年，北京南风科创应用技术，武汉劳雷绿湾船舶科技、上海遨拓深水装备技术开发、南风（上海）精密物理仪器、杭州边界电子技术、



方励主持研制的FlyImager声学/光学水下目标快速搜索识别系统获得发明专利。Patented FlyImager Fast Acoustic/Optical Underwater Target Locating And Recognition System designed by Fang Li.

北京方位智能系统技术、上海劳雷福熙航空智能科技七个公司相继成立。方总幽默地比喻说，领头羊仍是一只干活的羊，他要带领团队不停向前。

时隔八年回访，劳雷影业工作室变身劳雷电影工厂

从2000年创立劳雷影业开始，今天的劳雷影业已经从当年的劳雷工作室成长为劳雷电影工厂。在北京七棵树创业园里，方总的电影梦想已经华丽变身为犹如好莱坞电影流水线一般的影业制作一条龙工厂。在面积为7000平米的劳雷电影工厂体系内，每一个别有洞天的工作室都让人耳目一新，拥有国内最顶级的前期、后期影视制作设备让方总的电影梦发扬光大。谈起他心爱的电影，方总更是滔滔不绝，他说：“前10年，可以说纯粹出于个人爱好，平均2~3年做一部，没有提高到产业的高度。现在因为有了快速成长的规模电影市场，我的梦想已经变成有生之年制作出几十部观众想看的好电影。我想拥有一个完整的电影人生。”

正如方总所自我要求的那样，在最近的10年来，劳雷影业佳作频出。2010年电影《观音山》在东京电影节获奖并收获8000万票房，《后会无期》获得4.6亿票房，《二次曝光》、《家在水草丰茂的地方》、《万



自主研制的无人自主多波束海洋测绘系统在青海湖进行水下三维地形测绘。
Hydrographic Survey in Qinghai Lake with ASV based multibeam echo sounder system.

物生长》都有不俗表现。今年底，投资很大的《阳光不是劫匪》也将与观众见面。无疑，这部融合当今最高电影科技和工业水平的影片同样值得我们翘首以待。

方总的劳雷工业和劳雷影业彼此是独立的，也是融合的，劳雷工业的高科技为劳雷影业插上了想象并能实现的翅膀。方总说：“这些年的影像数字化引入到虚拟现实，让电影制作多快好省，缩比场景建立的虚拟场景让电影创意的空间更大。我们打造了劳雷电影工业的生态圈，在一个空间里，可以完成电影制作的多个环节。劳雷还引进了世界顶级的电影后期制作设备，组建了画林映像艺术公司和声林音效艺术公司，这些电影后期制作设备都是国内一流技术，已经在业界打出了品牌。”方总是有着战略眼光的企业家，同时又是电影人里的科技人。科技和电影的完美结合让劳雷影业在中国影视独树一帜。过去 10 年，方总完成了电影的二次创业，不仅为市场输送了多部佳作，更是聚集了年轻的事业伙伴在电影浩瀚的世界里快乐遨游。

“里斯本丸”纪录片 劳雷工业和劳雷影业的完美组合

方总创办的劳雷工业和劳雷影业至今在中国市场参与和制作了



方励带着他的技术团队和无人艇载多波束声纳测绘装备作为志愿者参与潘家口水库失联潜水员的水下搜索定位工作，并成功找到两位遇难者。
Working as volunteer, Fang Li and his technical team successfully located two diver victims who lost communication at Panjiakou Lake.

多个具有广泛影响力的项目。

五年前，方总在东极岛为电影《后会无期》勘景时听当地人谈及该海域是二战里斯本丸沉船海域，好奇心让方总开始聚焦到这个重大历史事件上。1942 年，“里斯本丸”和 800 多名英军战俘一同沉入中国舟山海域。沉船在哪里？800 多名战俘的英魂将回归何处？好奇心和使命感让方励与里斯本丸沉船结下了不解之缘。历经数年的努力探索，2017 年 9 月，劳雷团队完成沉船搜寻工作，在“里斯本丸沉没 75 周年纪念”之际，将尘封的历史揭开，确认了沉在舟山海底的沉船就是当年的“里斯本丸”。这是劳雷高科技的成果，也是方总好奇心的释放。

“现在，正在紧锣密鼓地拍摄和创作‘里斯本丸’的纪录片和故事片，目标是 2019 年纪录片上映，2022 年‘里斯本丸’沉没 80 周年时，在全球推出全英文版故事片，希望可以成为经典。”方总的电影梦正在追求一个新的高度。“里斯本丸”沉船的位置确认以及未来无比令人期待的“里斯本丸”纪录片和故事片的全球上映，都将是劳雷工业和劳雷影业的完美组合，这也是方总的科技梦想和电影梦想对于人类历史的又一次有价值的认知和成像。



作为项目负责和技术协调人的方励代表英国 PerrySlingsby 公司和劳雷工业公司在为中国海军定制的 LR7 深潜救生艇海试现场。
Representing PerrySlingsby Engineering and Laurel Technologies, Fang Li worked as the project and technical coordinator at sea trial of UK made LR7 DSRV for PLAN.

采访中，记者时刻感受到方总的个人魅力，一个充满个性并具有人文情怀的企业家，一个充满好奇心的顽童，在他的谈话中，你会不断被他的情怀和理想所激励，被他所秉承的人生态度所打动。回望过去，方总感叹道：“今年是中国恢复全国高考统考 40 年和改革开放 40 年。我就是 1978 年参加高考的，随后又赶上了改革开放的伟大时代，可以说，踩准了节奏，预判了时代的发展，见证了科学技术的进步以及中国电影产业的蓬勃发展，现在回想起来让人感慨。我的终极梦想是一直行走在路上，终点就是倒在路上，把科技成果和影视作品留下来。”

方总的人生态度豁达，他是幸运的，赶上了好时代，并当之无愧地成为了这个伟大时代的弄潮人和见证人。这些成就来自于天赋，来自于纯粹热爱，更来自于好奇心。我们衷心祝愿方总的劳雷工业和劳雷影业能为人类提供更多的探索世界的‘武器’和记载入史册的影像。不断的好奇和寻找才能不断产生灵感。这是方总和他的劳雷团队不断前行的动力源泉，也是劳雷一往无前的根本所在！

Driven by my great curiosity, I keep exploring the unknown. In the field of earth exploration and ocean survey, we constantly work on new technological solutions and scientific applications; in the field of film production, we are not only continuously trying hard to make more quality movies for the audience but building up more technological facilities and capabilities for film production in China as well. In the past 26 years since I came back to start my business in China, I have always followed my personal interests and dedicated all my efforts to geophysical/oceanographic technologies and film production. Being active in geophysical exploration and oceanographic investigation fields, it enables me to have a better understanding of our planet. Being passionate about film production, it brings me more life experience and makes myself stay young.", explains Mr. Fang Li, the President of Laurel Technologies and Laurel Films.

As the world's well-known distributor and system integrator of scientific instrumentation and technical services, Fang established Laurel Technologies in 1992, specializing in geophysical exploration and oceanographic investigation



制片人方励和主创团队参加电影《万物生长》首映交流活动。
Producer Fang Li and his partners at press conference for their new movie EVER SINCE WE LOVED.

systems. For the past 26 years, Fang, together with his team has always been enthusiastic on bringing new technologies to and developing creative solutions for the geophysical and oceanographic communities in China. Similarly, driven by great curiosity and passion on film making, Fang founded Laurel Films in 2000 and has produced a number of well-received feature films. As Fang says, "in this fast-changing world, I have always kept my eyes open and tracked on the new technology trend, looked ahead on what could make a hit to our fields. I have been so lucky to live through this great time and witnessed the fascinating technology revolution worldwide and the fast emerging film industry in China. I am really a direct beneficiary of this great time".

Continued Expansion of Laurel Technologies

Multinationals in China had interviewed Fang at the 20th and 30th anniversary of China's reform and opening up and the 10th anniversary of China's entry in the WTO. Today, at the 40th anniversary of China's reform and opening, Fang pleasantly talks with Multinationals in China again about endless exploration of Laurel Technologies and growth of Laurel Films.

M&A of an Unmanned Helicopter Company and Acquisition of an Underwater Robot Factory. "In these years, the biggest change



制片人方励带领他的摄制组在美国洛杉矶为他的新片《阳光不是劫匪》完成部分老虎实拍任务。
Producer Fang Li and his crew successfully finished the shooting job of tiger actions in Los Angeles USA for his new production SUNNY ROBBERS.

in my daily work on technology is the shift of my focus. Instead of marketing and sales activities, I spend most of my staying at lab and factory working on R&D of new applications and tools. My recent attention is on unmanned solutions of geophysical exploration, oceanographic investigation, and environmental monitoring such as ASV, UAV, and ROV basted survey systems.", Fang summarizes so about the transformation of Laurel Technologies. As it is known, Fang acquired Deep Ocean Engineering Inc. (an remote controlled underwater robot company in Silicon Valley, U.S.) in 2010 and Flying-Cam in 2012 (an unmanned helicopter company in Belgium). With today's technology, people can expect to reach the extremely difficult spots of the earth and ocean to collect multivariable scientific data. The unmanned measurement platform is the optimal approach.

Launch of the world's first 150kg class jet fuel-powered long-range and large-load unmanned survey helicopter. "In the past 3 years, we put



制片人方励和主创团队参加电影《家在水草丰茂的地方》首映交流活动。
Producer Fang Li and his partners at after-screening Q&A for their new movie RIVER ROAD.

some serious effort and investment to develop a long range large payload multi-mission survey helicopter with long fly time. This is a jet fuel unmanned helicopter that can take off from and land to a research vessel at sea and fly through tough terrain in the mountain area or desert. Under Fang's leadership, Flying-Cam technical team successfully finished the first prototype at the end of last year and then introduced officially at AUVSI's XPONENTIAL 2018 trade show in Denver, Colorado USA on May 1, 2018. This unmanned survey

helicopter named DISCOVER can fly at speed of 150km/hr. with 10~30kg payload and 1~3hour fly time. It is suitable for multiple survey jobs with variety of scientific sensors. As the world's first specialized company of unmanned helicopter aerial photography, Flying-Cam has applied its unmanned helicopter system in filming, laser scanning, 3D topographic mapping, digital 3D modeling of photography, magnetic measurement, etc. In the past 30 years, Flying-Cam has won two Oscar Awards and one Technology and Engineering Emmy Award". Undoubtedly, Fang's whole investment and leadership of R&D in this unmanned helicopter remote sensing system also expresses Laurel's glory for eight years. It is reported that, this long-range and large-load intelligent unmanned helicopter released by Flying-Cam for the first time, hit the AUVSI's XPONENTIAL 2018 and make itself a new star of global remote sensing light unmanned helicopter.

Leadership of and participation in marine scientific research projects under state 863 program. As a participant and witness of China's reform and opening up, Laurel is a genuine industry leader in geophysical exploration and marine survey instruments and equipment. On behalf of Nanfoon Applied Technology Co., Ltd., founded by Fang as a returned overseas Chinese student, Fang



方励和他的搭档在美国洛杉矶奥斯卡颁奖典礼现场，他们的比利时 Flying-Cam 公司荣获电影科技的最高奖项“科学与工程奖”。Fang Li and his partner at Oscar awarding ceremony in Los Angeles USA, their Belgium based Flying-Cam AS received Science & Engineering Award.



制片人方励在英国采访二战沉船里斯本丸遇难英军战俘家人。 Producer Fang Li interviewing relatives of British POW victim on WWII sunken ship Lisbon Maru.

has taken the lead and participated in the some marine scientific research projects under National 863 Program, such as Deep-sea Inverted Pressure Echo Sounder Development Project, Hybrid Fast Unmanned Surface Vessel Marine Environment Monitoring System Project, Wave Glider Unmanned Autonomous Marine Environment Observation System Project, etc. and has contributed his years of scientific knowledge and engineering experience to the Chinese marine industry. To his credit, Fang who was elected as the Deputy Director of the Specialized Committee of Marine Technology and Equipment of Chinese Society of Oceanography last year. Fang also initiates and promotes the first Ocean Technology (OT) trade

show to be held in the same period of the China Conference on Ocean Technology in May, 2019 to establish China's own marine science and technology exhibition brand.

Establishment of a joint venture with CMG to manufacture airborne geophysical survey instruments in China. With great enthusiasm in geophysics, Fang formed a joint venture, Laurel-CMG Geophysics Ltd., with his partner CMG (Canadian Micro Gravity Ltd.) in 2017 in Shanghai to manufacture compact airborne and marine gravity meter system for unmanned platforms and helicopter towed airborne TDEM survey system. With 36 years of experience in marketing airborne geophysical survey instruments, Fang would like to dedicate his ten more years in manufacturing of airborne geophysical instruments in China now.

Establishment of new technology companies and teams. In the interview, Fang has expressed his entrepreneurial philosophy for many times as follows: "it is the happiest to turn your hobbies into means of survival and do what you like with people you like.

When you are happy to build new models and ideas, and then share them with more people with the same interests, a business model will arise". In these years, he had established Nanfoon Applied Technology Co., Ltd., Laurel Green Bay Ship Technology Ltd., AutoSubsea Underwater Engineering Ltd., Boundary Electronics Ltd., Frontier-V Intelligent Systems Ltd., Laurel-FC Airborne Intelligent Technology Ltd. successively. Meanwhile, Fang tells, he will still make great efforts to lead his teams to keep moving forward.

Growth of Laurel Films from a Office into a Production Studio

Since the founding of Laurel Films in 2000, today Laurel Films has grown from a small office then into a complete production studio. In Beijing Seven Tree Creative Park, Fang's movie dream has been transformed into a one-stop production studio with a full production process loop. In his 7,000m² studio, each unique and creative studio is equipped with top-class pre-and-post-production equipment, helping carry forward Fang's movie dreams. When talking about his favorite movies, Fang speaks, "In the first decade, it is almost purely out of personal interest that I make a film every 2~3 years in average, and it has not yet been escalated to the industrial level. Now, by virtue of the fast-growing film market, I have got a big dream to produce dozens more of fascinating movies and to enjoy a complete film producer career."

Over the past 10 years, Laurel Films has made many excellent works. In 2010, the film Buddha Mountain won two awards in the Tokyo International Film Festival and grossed 80 million yuan at the box office. The Continent grossed 460 million at the box office; and Double Xposure, "River Road", Ever Since We Love all had very remarkable performance. At the end of this year, the big production Sunny Robbers will also hit the cinema. This film integrates today's highest film technology and industry level, and undoubtedly will be worth waiting for.

Fang's Laurel Technologies and Laurel Films are independent of and integrated with each other. The high-tech of the former contributes to the growth of the latter. Fang says, "In these



制片人方励在英国采访二战沉船里斯本丸生还英军战俘。99 岁高龄的莫利先生。 Producer Fang Li interviewing Mr. Dennis Morley 99, the only survivor POW today from WWII sunken ship Lisbon Maru.

years, digital films have been introduced into virtual reality, boosting the film production faster and better, and the virtual scenes created by scaled scene enables a greater room for film creation. Meanwhile, we have built the ecosystem of the Laurel Technologies, so that we can complete multiple links of film production in one space. In addition, Laurel also introduced the world's top film post-production equipment, and set up Image Forestt Studio and Sound Forestt Studio. These film post-production equipment not only represent domestic first-class technology, but also have already branded in the industry." Being both a creative film producer and a technology master in the film industry, he perfectly combines technology with films, making a unique Laurel Films in the Chinese film circle. In the past 10 years, Fang has established his second professional career in film making, i.e., not only has delivered a number of excellent works to the market, but also gathered many young partners to develop new films together.

"Lisbon Maru PoWs" documentary is a wonderful encounter between Laurel Technologies and Laurel Films.

Founded by Fang, Laurel Technologies and Laurel Films have actively participated in and successfully produced certain projects with immense influence on public across China.

Five years ago, at the time of scouting locations for the



方励自费在英国主流媒体《泰晤士报》《每日电讯报》《卫报》连续刊几周登满版广告，寻找二战沉船里斯本丸 828 名遇难英军战俘家人。 Paid with his personal money, Fang Li put continuously for a few weeks full page advertisement looking for relatives of British POW victims from WWII sunken ship Lisbon Maru.

film The Continent in Dongji Island, Fang heard from the locals it is the sea area that Lisbon Maru was sunk in World War II. This strongly evoked his curiosity, impelled him to focus on the nearly forgotten historical event. When he learnt that, "Lisbon Maru" and more than 800 British prisoners of war onboard were together sunk into the Zhoushan Islands in 1942, he wonders where the sunken ship was and where the souls of more than 800 prisoners of war would return. Such intense curiosity and sense of mission possess an indissoluble bound between Fang and Lisbon Maru. After several years' efforts, in September 2017, the Laurel team completed the sunken ship search and revealed the history on the occasion of the "75th anniversary of the sunken Lisbon Maru", confirming that the sunken ship at the bottom of Zhoushan Islands was the Lisbon Maru.

"Currently, the documentary and feature film of 'Lisbon Maru' is being filmed and created intensively, hoping to release the documentary in 2019 and globally launch the all-English feature film at the 80th anniversary of the sunken 'Lisbon Maru' 'in 2022', and both of them are hoped to make classics", Fang keeps on pursuing higher ideal height in story-telling to the world.

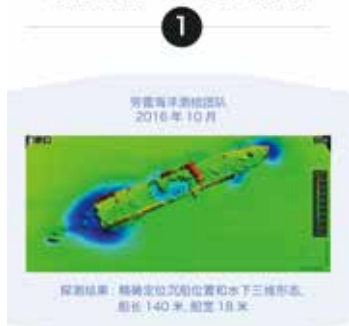
The confirmation of the sunken Lisbon Maru's location and the upcoming global launch of the "Lisbon Maru" documentary and feature film would be a perfect encounter between Laurel Technologies and Laurel Films, which will also provide a unique insight and valuable photography of Lisbon Maru through the combination of Fang's technology and film.

Looking back upon the past, Fang sighs, "This year is the 40th anniversary of China's resumption of college entrance examination and the 40th anniversary of the reform and opening-up as well. I took the college entrance examination in 1978, and then caught up with the great era of reform and opening-up. As it were, I had been keeping up with the pace, taking a broad and far-sighted view, and luckily witnessed the revolutionary progress of science and technology, and the booming development of the Chinese film industry likewise. Such experience has touched me a lot. Besides, my ultimate dream is to leave technological achievements and film works as much as I can".

Such impressive achievements stem from Fang's gifted talent, genuine passion and pure curiosity. We sincerely wish Laurel Technologies would offer more scientific devices for exploring the world and Laurel Films perpetuate art and history for the human beings. Constant curiosity and boundless exploration breed a steady stream of inspiration. This is not only the source where Fang's power comes from, but also the driving force of his Laurel team to keep rolling, which is the root of Laurel's spirit.



东极岛海域沉船 (E122° 45' 31.01", N30° 13' 44.42") 多波束声呐三维成像



调查队队员在船上作业



方励带领他的技术团队自费在东极岛海域完成对二战沉船里斯本丸的水下搜寻定位和精细三维声纳成像。 At his own cost, Fang Li with his team successfully located and imaged WWII shipwreck of Lisbon Maru with high resolution multibeam sonar.