ILLUSTRATIVE SALES MANUAL



Survival

Systems

Recognized World Leaders In:

Offshore, Oil, and Marine Safety and Survival Training

Industrial Safety and Survival Training

Aircraft Ditching Training

Training Simulation Technologies Manufacturing

50 Mount Hope Avenue Dartmouth, Nova Scotia Canada B2Y 4K9 Phone +1 902 466 7878 Fax +1 902 469 7878 Email albert@survivalsystems.info

Web Page: www.survivalsystemsgroup.com

Saving Lives is our Business!



13-Sep-10

Dear Client

Survival Systems is pleased to provide you with this illustrative guide that provides an overview of our highly reliable, cost effective, and performance oriented underwater escape trainer – the Modular Egress Training Simulator (METS[™]) – an all encompassing solution to the challenge of effectively training aircrew. Given that one (1) ditching occurs every 100,000 hours, aircrew flying over water could one day be faced with a life-threatening situation of having to egress from a ditched and / or submerged helicopter. The METS[™] is a proven, state-of-the-art training system that has been used to provide emergency egress training to commercial and military personnel around the world for more than 20 years.

The METS[™] provides a high degree of realism and flexibility through the use of moveable and interchangeable interior and exterior panels, bulkheads, seats, emergency egress exits, and exit release mechanisms. These modular components closely simulate the specific characteristics of the most common types of helicopters used by flight crews. The flexibility and ability to recreate realistic emergency conditions increases a trainee's likelihood of surviving a ditching and also enables the METS[™] owner to attract a broader client base.

At Survival Systems, we have a team of highly qualified training personnel consisting of retired helicopter pilots and crews, world-renowned aerospace human factor specialists, and experienced engineers, technicians, and training instructors. Our training programs incorporate a range of possible crash scenarios including inverted underwater egress. These graduated training techniques are designed so that even trainees who do not have strong swimming skills can successfully complete our comprehensive training program.

One measure of our success is indicated by the fact that over the past 20+ years, it is estimated that between 300,000 - 500,000 aircrew, passengers, offshore workers, paramedics and special operations personnel have been safely trained in METSTM devices, totaling more than 2,000,000 METSTM training sequences. Our greatest reward, however, has been provided by the numerous helicopter crews and passengers who have actually ditched, and who directly attribute their successful escape from a sinking aircraft to the <u>training received from Survival Systems' training and our METSTM.</u>

Although we are a business operation, the preservation of life forms the very foundation of our existence as a company, and we are committed to our clients and to a long-term transfer of technology. We therefore urge you to carefully consider our METS[™] Total Systems Approach to training, the METS[™] low maintenance costs, our years of training expertise, and superior after-sales-support. We believe all these value-added benefits will help your organization fulfill all its emergency egress training requirements.

Trish Tully, VP Sales & Marketing SURVIVAL SYSTEMS trish@survivalsystems.info





- Excellent Quality Training Simulation Technologies Tested at Factory Before Client Delivery
- The METSTM is Proven to Disorient (Underwater Disorientation as Induced by Two Helicopter Ditching Devices; Aviation, Space and Environmental Medicine 2000, 71: 879-88)
- More Than 70 METS[™] Sold in More Than 20 Countries
- Replicas of Actual Emergency Escape Exits (175+)
- Expert Delivery and Support
- Total Systems Approach
- Triad of Value:
 - Safety Education
 - Training Technologies
 - Applied Research and Development
- Robust Egress Trainer Warranty on Moving Parts 12 Months – Warranty on Mainframe Five (5) Years – Minimum 25 Year Life Expectancy – Extended Warranty Option
- Modular Multiple Aircraft Replication and Quick Reconfiguration
- Realistic Training Programs
- Outstanding Client References and Survivors' Testimonies
- 24 Hour Worldwide Technical Support
- > Technology Transfer, Spares, Customer Care Program

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Visual Identity Program Survival Systems Limited

Orange was chosen for its symbolism of emergency considerations and its consistent international use on safety, survival and rescue equipment.

The frame represents existing search and rescue organizations, equipment and procedures. It is thin to indicate that, although it is certainly there, it possibly will not save an untrained person on time.



Design by: Paul-Michael Brunelle, B.Des. MGDC July 1996, Halifax, Nova Scotia

A Visual Identify Program is designed to serve two basic communications functions;

- to market the company by identifying it with a memorable image in a consistent graphic presentation;
- 2/ to explain the company to:a/ society in general,b/ current and potential
 - client organizations, and c/ its employees, to
 - contribute to team spirit.

Here we explain the concepts and reasoning behind the design of the basic elements; color, symbol and logotype.

> Blue was selected for the second colour since Survival Systems Limited deals principally with water hazards. The somber tone reflects the often inhospitable nature of the ocean.



The logotype is set in an internationally recognized typeface, commonly available and compatible with identities of client firms.

Survival Systems Limited Survival Systems Limited



The white lines across the blue serve to give perspective and dimension to the image.



The logotype is presented in the two program colors; Limited in the dark blue to discriminate it from its affiliates.

Survival Systems Limited

The dot represents the person or group in the water; its small size reinforces that they are alone in a hostile environment and their shortterm survival is largely in their own hands.



The logotype is positioned above the symbol since it is from above that rescue is usually affected.





Corporate Organizational Chart, Purpose, Intent, Locations, Web

Survival Systems Holding Limited

Survival Systems Limited (1982) [NS, Canada]

Survival Systems USA, Inc. (1998) [CT, USA]

Purpose

Our Purpose is to Enhance and Preserve Workers' Lives Through Safety Education, Training Technologies, and Research and Development.

Strategic Intent

The Strategic Intent of Survival Systems is To Create, Set, and Maintain the Standard or Measurement by Which All Workers Who May Have to React, Escape, Egress, Effect a Rescue, or Survive a Life-Threatening Situation Over Water, Air, or Land Will Be Trained.

Headquarters

Canada:50 Mount Hope Avenue, Dartmouth, Nova Scotia, Canada B2Y 4K9United States:144 Tower Ave. Groton, CT 06340

Training Locations

Canada:	Dartmouth, Nova Scotia
United States:	Groton, Connecticut
	USMC – Camp Hansen – Okinawa, Japan
	USMC – MCB Hawaii – Kaneohe, Hawaii
	USMC – Camp Pendleton, California
	USMC – Camp Lejeune, North Carolina
	US Army – Fort Campbell, Kentucky

Web Site

www.survivalsystemsgroup.com



Survival Systems Canada



Survival Systems USA



Egress Training Facilities













USA Training Headquarters: Groton, Connecticut Maria C. Hanna, President

Okinawa, Japan: Camp Hansen Marine Corps Base Robert Smith, Site Manager

<u>Kaneohe Bay, HI</u>: Kaneohe Bay Marine Corps Base Mike Davis, Site Manager

Jacksonville, NC: Camp Lejeune Marine Corps Base Steve Lampley, Site Manager

Oceanside, CA: Camp Pendleton Marine Corps Base John Schulte, Site Manager

<u>Clarksville, TN</u>: Fort Campbell Army Base Chris Smith, Site Manager



- Founded in 1982
- World Leader in High Fidelity Emergency Egress Simulators and Associated Safety Survival Training for:
 - The Offshore, Marine, Aviation, Military, and Industrial Sectors
- Modular Egress Training Simulator (METS[™]) [Ditching Egress]
- FirePan[™] [Fire Fighting Training]
- Shallow Water Egress Trainer (SWET[™]) [Familiarization Ditching Egress & Spare Air Training]
- Shallow Water Initial Memory Mechanical Exit Release (SWIMMERTM) Device [Practice Under Water to Locate and Operate Emergency Escape Exits]
- Emergency Egress Lighting Systems (EELSTM) [Installed in Actual Helicopters to Assist in Successful Egress]
- Recipient of Numerous Export Awards [Provincial and National]
- METS[™] has Conformité Européenne (CE) Approval
- SmartJib[™] and Xross Gantry Hoist (XGH[™]) Lifting Systems Enhance METS[™] Training Programs with Integrated Fail-Safe Technologies (No Single Point of Failure)



Expertise – Aviation, Marine, and Survival

EXTENSIVE EXPERIENCE IN HELICOPTER FLYING, SEARCH AND RESCUE, MARINE AND OFFSHORE OIL OPERATIONS, HELICOPTER UNDERWATER ESCAPE TRAINING AND HUMAN FACTORS RELATED TO MARINE AND AVIATION SURVIVAL EQUIPMENT



Albert Bohemier, CEO, Survival Systems Limited

- Over 2500 Hours of Military and Civilian Helicopter Flying
- Eight Years Training Students
- Founder of Survival Systems (1982)
- Recipient of Entrepreneur of the Year Award (1995)
- Inventor of the Revolutionary METS™
- Two Canada Export Awards; Four Nova Scotia Export Awards



Maria C. Hanna, President, Survival Systems USA, Inc.

- Over 300 Hours Civilian Fixed Wing Flying
- Nine Years Training Students
- 16 Years Instructing Experience
- PADI Master Scuba Diving Trainer
- B.Sc. Nuclear Engineering



USMC CH-46 Ditching (1999)



Pilot Attempts Landing When Rear Wheel Entangles With Ship's Guardrail and Flips Over the Side – Seven Perish





While the Taiwanese Police Force Demonstrates its Capabilities to the Media, the Helicopter Loses Power – One Perishes





Ditching Survivors' Success Stories – Testimonials

The following excerpts were taken from full testimonials provided by survivors of helicopter ditchings who had undertaken Aircraft Ditching Training in the Modular Egress Training Simulator (METS[™]) at Survival Systems in Canada.

Bell 412 Griffon - Capt KR Krey, Capt SW Pelly, Sgt SD McCoy, MCpl JBA Daigle -12 November 1996 - Northern Labrador, Canada

I would like to thank you for the excellent and very realistic training that you provided us with. This training saved our lives. The sensation of water rushing in was very similar to the one that was simulated in the dunker training; recall of this training allowed us to follow through with the proper sequence of actions and successfully egress the aircraft which had rapidly filled with water.

Bell 206 - Robert Thorne - June 1995 - British Columbia, Canada

Because of the information I received from Survival Systems regarding proper evacuation procedures, I was able to avoid panic, I knew exactly what to do and had planned my escape procedure in advance.

CH-136 Kiowa - Capt KH Jones - 15 June 1995 - Lake Simcoe, Ontario, Canada

My first thought was "Okay, I know how to deal with this". As I cleared my exit, undid my harness and moved toward the surface, the second thought to run through my mind was, "I knew the egress course would be worthwhile, but I didn't expect to use the training within 36 hours of completing it!"

CH-124 Sea King - Lt J Tasseron - 27 February 1993 - Gulf of Mexico

Simply put, without your course, I might not have survived my first major deployment. The methodical yet realistic training process employed by Survival Systems' staff gave me the edge I needed to stay alive in an all-too-real ditching emergency.

CH-124-A Sea King - MCpl DJ McDonald - 27 February 1993 - Gulf of Mexico

An unexpected benefit of the training was my ability to cope with the stress and fear associated with such an incident occurring at night in heavy seas. This course should be mandatory for anyone involved in helicopter over-water operations.

CH-124 Sea King - Capt PE Hitchcock - 27 February 1993 - Gulf of Mexico

While the aircraft was in the process of capsizing, I followed the step-by-step egress procedures taught by Survival Systems. I found that although disoriented and in a stressful situation, the training quickly came back to me; and the whole evacuation was just like another run in the METS[™].

CH-124 Sea King - Capt S McLean - 27 February 1993 - Gulf of Mexico Your training is so realistic that to appreciate the value of your techniques, one has to survive a real situation. It saves lives.

CH-124 Sea King - MCpl Gerry Corrigan - 4 August 1991 - Schenectady, New York, USA

I have been flying for 17 years, both civilian and military. I have done many practice bailout / ditching exercises, but no other training could have better prepared me [for the crash] than what I was taught at Survival Systems.



Underwater Escape Training Technology History (1982 – 1996)



1982 to 1985 Dilbert Dunker



1985 to 1987 McLean & Gibson



1985 Addition of Cockpit to MKII McLean & Gibson



1991 METS™ Basic Design Freeze METS™ Model 30



1987 to 1988 Survival Systems Develops the First Modular Egress Training Simulator (METS[™]) Prototype



1996 METS™ Design Advancements Lead to Larger METS™ Model 40



Underwater Escape Training Technology History (1998 – 2004)



1998 Standalone Apache METS™



1998 METS™ Model 5



1999 METS™ Model 1



2000 METS™ FRC



2002 Modular Amphibious Egress Trainer (MAET™)



2004 METS™ Model 3



Underwater Escape Training Technology History (2007 – 2008)



Multi-Platform METS[™] (MPM[™]) with High Mobility Multi-purpose Wheeled Vehicle (HMMWV) and Amphibious Assault Vehicle (AAV) Modules



H-6 Little Bird METS[™]



Lifting Systems Technology History



4000 Lb Single-Drive Jib Launch, Operation, and Recovery Systems (LORS)



12000 Lb Dual-Drive Standard Jib LORS



12000 Lb Bridge Xross Gantry Hoist – BXGH™



6000 Lb Dual-Drive Jib LORS



12000 Lb SmartJib™ LORS



12000 Lb Xross Gantry Hoist – XGH™



Personnel – Rated METS™ Lift Systems Technology History



Survival Systems

Manual Bridge Xross Gantry Hoist – MBXGH™



Twin Gantry Hoist – TGH™



- Designed With Safety as a Paramount Requirement
- Well Marked Exits can be Operated From Interior and Exterior of the METS[™]
- Back-Up, Fail-Safe Suspension System
- ➢ Rotation Arrest Brake Allows METS[™] Rotation to be Halted at any Time During the Training Session
- Constructed to Minimize Sharp Edges
- Adequate Interior Room for Trainees and Instructors to Move About Safely
- Can be Raised 6-8 Inches (15.24 20.32 cm) After Being Submerged to Create an Air Gap to Provide Emergency Breathing Air Space
- Modular Design Accommodates Simple to Complex Training Configurations
- Seatbelts Incorporate Emergency Release Systems
- ➤ Triple Safety Redundancy Between the METS[™] and Man-Lift Launch, Operation, and Recovery System (LORS) or Xross Gantry Lifting System.
- Safety Features are Designed to Inspire Confidence in Trainees



The METS[™] Involved in Research and Development

Survival Systems is committed to providing the best possible instruction in emergency underwater escape training. To reach this goal, we have developed the Modular Egress Training Simulator (METS[™]) to replicate specific aircraft configurations, and the METS[™] is used in simulating and learning how to survive from a ditching situation. A natural extension of this training relates to the trials and evaluations on hazards, egress, and procedures relating to the improvement of onboard aircraft safety. Research and development projects involving the METS[™] are listed below, and we enjoy a strong cooperative relationship with Dalhousie University's Faculty of Health and Human Performance graduate students.

- Technical Report: Man Rating the Helicopter Underwater Escape Trainer Using An Advanced Survival Systems Jib Crane at Three Different Descent Speeds [2007]
- Desensitizing a Pilot with Phobic Responses to Required Helicopter Underwater Escape Training [2007]
- Determination of the Influence of Different Training Methods on Performance and Retention of Helicopter Escape Training [2005]
- Underwater Detectability of a Lighting Systems on a Helicopter Escape Exit [2004]
- Evaluation of Equipment for Aiding Sea King Aircrew to Make a Successful Underwater Escape Wearing and AC-4 Respirator [2002]
- Emergency Breathing Systems / Spare Air Evaluation for Helicopter Underwater Escape [2001]
- Determination of the Correct Placement of the Martin Baker Connectors and the Maritime Lanyard on the LPSV in the Cormorant Helicopter [2001]
- Breath-Holding Ability of Offshore Workers Inadequate to Ensure Escape from Ditched Helicopters [2001]
- Requirement for Emergency Breathing System (EBS) in Over-Water Helicopter and Fixed-Wing Aircraft [2001]
- The Basis for the Development of a Fuselage Evacuation Time for a Ditched Helicopter [2001]



- Fast Rescue Craft (FRC) Ditching Trainer [2000]
- Underwater Disorientation as Induced by Two Helicopter Ditching Devices [2000]
- To Examine the Detectability of the UEE Lighting System Underwater at Two Different Distances from the Human Eye [1999]
- Evaluation of a New Universal Jettison Mechanism for Helicopter Underwater Escape [1999]
- Development of the METS[™] Model 1 [1999]
- The Development of Emergency Breathing Systems (EBS) / Lifejacket System for the Royal Malaysian Air Force [1998]
- The Effect of Wave Motion on Dry Suit Insulation and the Responses to Cold Water Immersion [1998]
- The Abysmal Performance of the Inflatable Liferaft in Helicopter Ditchings [1998]
- Options for Liferaft Entry After Helicopter Ditching [1998]
- > The Ergonomics of Jettisoning Escape Hatches in a Ditched Helicopter [1993]
- New Ship-Borne Aircraft (EH101) Port Side Cabin Operator, Emergency Egress Trials [1993]
- Factors Affecting Egress from a Downed Flooded Helicopter [1993]
- To Develop a Procedure / Protocol for the Transport of Medical Evacuees by Helicopter from an Offshore Platform to Shore-Based Facilities [1992]
- Emergency Breathing System as an Aid to Egress from a Downed Flooded Helicopter [1990]



The METS[™] Involved in Research and Development



UK Configuration – The Basis for the Development of a Fuselage Evacuation Time for a Ditched Helicopter [2001] To Evaluate The Time It Takes For 18 Personnel To Escape. Results Were That It Takes 28 – 96 Seconds Implying That Spare Air Must Be Provided.



Below is a list of research and development conducted by Dr. Chris Brooks relating to survival training.

- Survival in Cold Waters Staying Alive. Report to the Marine Safety Secretariat of Transport Canada. T.P. 13822 E. [January 2003]
- A Retrospective Analysis of Drownings Reported to the British Columbia Worker's Compensation Board 1976 – 2002. Report No. 1202. [December 2002]
- Assessment of Motion Effects on the FPSO (Floating, Production, Storage and Offloading) Vessel Terra Nova. DRDC – Toronto report TR 2002 – 144. [October 2002]
- Disorientation in Helicopter Ditching and Rigid Inflatable Boat Capsizement: Training is Essential to Save Crews. Paper presented at NATO RTO Meeting. [April 2002]
- What is the Survival Suit Designed to do and Will it Work For Me in the Event of a Ditching or Ship Abandonment? Paper presented at ATO RTO Meeting. [October 2001]



Modular Egress Training Simulator General Description Highlights





METS[™] Model 3





METS[™] Model 30



METS[™] Model 40



Apache METS™

- Simulates Typical Underwater Disorientation Caused by a Rapidly Sinking, Inverted Helicopter
- One Ditching Every 100,000 Hours of Flying, With Only 15 – 60 Seconds Warning
- Modular, Robust, Highly Realistic and Reliable, Low Maintenance, Re-Configurable
- Replicates any Helicopter Type and Some Aircraft
- > 76 METS[™] Sold Worldwide
- Interchangeable Exits (175+ Manufactured to Date), Seating, Bulkheads, Props
- Different Models for Appropriate Helicopter Size Replication, to Meet Trainee Numbers, Budgets
 - Life-Saving Aircraft Ditching Training
- Supported by Empirical Research and Development
 - Saves Lives!



METS[™] Model 1

The smallest version METS[™] manufactured to date and mobile due to its size and weight. It accommodates two interchangeable emergency escape exits, two forward fixed emergency escape portals, and seats a maximum of five students at any one time. The METS[™] Model 1 can accommodate either a cabin or a cockpit configuration at any one time.

METS[™] Model 3

Replicates small commercial helicopters and small fixed-wing aircraft having two or four seats. The Model 3 includes a cockpit and can incorporate four interchangeable emergency exits. It is also ideal for start-up training operations with larger markets.

METS[™] Model 5

Replicates small to medium and longer commercial helicopters (i.e., Bell 206) and small fixed-wing aircraft having two or four seats and a centre extension, making it 31" (78.74 cms) longer than the METS[™] Model 3. The Model 5 includes a cockpit and can incorporate four interchangeable emergency exits. It is also ideal for start-up training operations with larger markets.

METS[™] Model 30

The size of a S-61 / Puma, Bell 212, UH-60, S-76, etc. and has eight interchangeable emergency exit panels. The Model 30 is benchmarked as the international standard for use in delivering aircraft ditching training, especially to the offshore industries.

METS[™] Model 40

Accommodates eight interchangeable emergency escape exits. Used to replicate large, wide-bodied helicopters (i.e., Super Puma, CH-53, S-61, EH-101, CH-47, NH-90, etc.) or smaller fixed-wing aircrafts (i.e., the Hercules C-130, etc.). Military services prefer the METS[™] Model 40.

Apache METS[™] and other Standalone Helicopter-Specific METS[™]

Replicates the AH-64 Apache attack helicopter, wherein the gunner sits ahead of and below the pilot. The Apache METS[™] is a unique design that includes appropriate exits and stroking seats. The US Army in South Korea; and Survival Systems USA, Inc and Survival Systems Limited. are home to the Apache METS[™]. Specific Tiger and Cobra METS[™] and other helicopter-specific models will be designed and manufactured based on orders.

Fast Rescue Craft (FRC) / Rigid Inflatable Boat (RIB) Escape Simulator

Used for the purpose of delivering underwater escape training from a FRC or RIB, this modular simulator is incorporated to the mainframe of a METS[™]. It consists of a coxswain's console, seating positions for crew, sponson assemblies, and inflatable righting bladder.

Multi-Purpose Module METS[™] (MPM METS[™])

Military personnel in combat zones are in danger of drowning if their vehicle rolls over into water. This vehiclespecific METS[™] provides a training platform for underwater egress from land-based armoured vehicles. To date, model 1114 and 998 High Mobility Multi-purpose Wheeled Vehicle (HMMWV) doors have been fabricated with the latest version break-out front window and turret design and Amphibious Armoured Vehicle (AAV) modules have been fabricated for the MPM METS[™]. Additional vehicle-specific simulators are in development.



Modular Egress Training Simulator METS[™] Model 1



Accommodates Two Interchangeable Emergency Escape Exits and Has Two Forward Fixed Emergency Escape Portals; Recommended Trainees Four (4); Mobile Due to Size and Weight; Budget Conscious; Good for Start-Up Operations and Small Student Numbers





Modular Egress Training Simulator METS[™] Model 3



Accommodates Four Interchangeable Emergency Escape Exits; Recommended Trainees Six (6); Mobile Due to Size and Weight; Budget Conscious; Good for Start-Up Operations and Small Student Numbers



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Modular Egress Training Simulator METS[™] Model 5



Accommodates Four Interchangeable Emergency Escape Exits; Recommended Trainees Eight (8); Size of Bell 206





Modular Egress Training Simulator METS[™] Model 30



Accommodates Eight Interchangeable Emergency Escape Exits; Recommended Trainees 12; Size of a S-61 Puma



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Modular Egress Training Simulator METS[™] Model 40



Accommodates Eight Interchangeable Emergency Escape Exits; Recommended Trainees 14; Size of a CH-53 or Small Hercules C-130, EH-101



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Fast Rescue Craft (FRC) / Rigid Inflatable Boat (RIB) Escape Simulator



Survival

Systems



Configured to a METS™ Mainframe and Includes Coxswain's Console, Seating Positions for Crew, Sponson Assemblies, and Inflatable Righting Bladder.



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Modular Egress Training Simulator Standalone Helicopter – Specific METS™



AH-64 Helicopter Specific METS[™] Includes Gunner and Pilot Modules, Appropriate Exits, Stroking Seats; Recommended Trainees Two (2). Other models are currently being designed.





Modular Egress Training Simulator Standalone Helicopter – Specific METS[™]



H-6 Little Bird METS[™] can be Configured as Both a Mission Helicopter or an Attack Helicopter. The Cockpit FLIR Display Panels are Standard, and Rocket Launcher, Machine Gun, and Gatling Gun Is Available.





Multi-Purpose Module (MPM) METS[™] Simulators



High Mobility Multi-Purpose Wheeled Vehicle Specific (HMMWV) METS™



HMMWV and Amphibious Assault Vehicle Combined Unit





Clients Highlighted in Yellow Are Military

Country	Training Centre	Model	Year	Trainees
Australia Darwin	North Australian Safety Centre Email: <u>hhollingsworth@ifap.asn.au</u> Web: <u>http://www.ifap.asn.au/locations/darwin.html</u>	M3 Prototype	1989	Offshore Passengers, Police / Television Crews
Australia West Sale	Red Alert [Previously BHP / ESSO] Email: <u>brockleyr@red-alert.com.au</u> Web: <u>www.red-alert.com.au</u>	M30	1990	Australian Military, Offshore Passengers, Civilian Aircrew
Netherlands Den Helder	Den Helder Training Centre B.V. (D.H.T.C.) Email: <u>roliemans@dhtc.nl</u> Web: <u>www.dhtc.nl</u>	M30	1990	Belgium Military, Offshore Passengers, Civilian Aircrew
Norway Bergen	Falck Nutec Bergen Email: <u>mwi@falcknutec.no</u> Web: <u>www.nutec.no</u>	M30	1991	Finnish / Norwegian / Swedish Militaries, Offshore Passengers, Civilian Aircrew
Brunei Seria	LTS Engineering Technology Email: <u>ltsstc@brunet.bn</u>	M30	1993	Brunei and Malaysian Militaries, Offshore Passengers, Civilian Aircrew
Indonesia Jakarta	P.T. Samson Tiara Email: <u>dd18@cbn.net.id</u> Web: <u>www.samson-tiara.co.id</u>	M30	1994	Offshore Passengers, Civilian Aircrew
Scotland Aberdeen	Falck Nutec Centre for Safety Ltd. Email: <u>ds@falcknutec.co.uk</u> Web: <u>www.nutecuk.com</u>	M30	1994	Offshore Helicopter Aircrew & Passengers, Civilian Aircrew
Australia Perth	Industrial Foundation for Accident Prevention (IFAP) Email: <u>mgillespie@ifap.asn.au</u> Web: <u>www.ifap.asn.au</u>	M30	1994	Australian Coast Guard, Offshore Passengers, Civilian Aircrew, Television Crews, Air Ambulance
Indonesia Jakarta	Jakarta Offshore Training Centre (JOTC)	M30	1995	Indonesian Military, Offshore Passengers, Civilian Aircrew
Netherlands Gilze Rijen	Royal Netherlands Air Force Email: <u>EPM.v.Berkel@mindef.nl</u> Web: <u>http://www.defensie.nl/luchtmacht/</u>	M30 Apache Modules	1995 1996	Dutch Military, Military Attack Helicopter Aircrew
USA Louisiana	Marine Survival Training Centre University of Southwestern Louisiana Email: <u>mstc@louisiana.edu</u> Web: <u>www.louisiana.edu/InfoTech/MSTC/</u>	M30	1996	United States Coast Guard, Offshore Passengers, Civilian Aircrew
Norway Stavanger	Falck Nutec Centre for SafetyEmail:borge.hognestad@nutec.noWeb:www.nutec.no	M30	1996	Offshore Passengers, Civilian Aircrew
South Korea P'Ohang	Republic of Korea Navy Email: <u>ints45@empal.com</u> Web: <u>www.dapa.go.kr</u>	M30	1997	Korean Military
Denmark Esbjerg	Falck Nutec Esberg A/S Email: <u>stig.petersen@falcknutec.dk</u> Web: <u>www.offshore-</u> <u>denmark.dk/172.html</u>	M5	1998	Danish and Swedish Militaries, Offshore Helicopter Aircrew, Civilian Aircrew



Clients Highlighted in Yellow Are Military

Country	Training Centre	Model	Year	Trainees
Netherlands Rotterdam	Falck Nutec Email: <u>j.dewinter@falcknutec.nl</u> Web: <u>www.falcknutec.nl</u>	M30	1998	The Netherlands Military, Offshore Helicopter Aircrew, Civilian Aircrew
USA Connecticut	Survival Systems USA, Inc. Email: <u>mhanna@survivalsystemsinc.com</u> Web: <u>www.survivalsystemsinc.com</u>	M40	1999	United States Coast Guard, Transportation Board, State Police, Aviation Safety Managers, Aeromedical Services
Canada Nova Scotia	Survival Systems Training Limited Email: joelc@sstl.com Web: www.sstl.com	M40 M40	1999 2010	Canadian Military and Coast Guard, Offshore Passengers, Civilian Aircrew
UK Teesside	Falck Nutec Email: <u>gg@falcknutec.co.uk</u> Web: <u>www.nutecuk.com</u>	M40	1999	Norwegian and British Militaries, Offshore Helicopter Aircrew & Passengers, Civilian Aircrew
USA Washington	United States Air Force, Fairchild AFB Email: <u>paul.mikolajczyk@fairchild.af.mil</u> Web: <u>www.fairchild.af.mil</u>	M40	1999	United States Military
Nigeria Kaduna	Nigeria Air Force Aeromedical Email: <u>GDavis4144@aol.com</u> Web <u>www.etcaircrewtraining.com/ats-</u> watersurvival.php	M30	1999	Nigerian Military and Coast Guard
South Korea Seoul	Eighth United States Army, 6 th Cavalry Brigade Email: <u>Robert.matheny@korea.army.mil</u>	Apache	1999	United States Military
Brunei Kuala Belait	Megamas Training Company Email: <u>roger.ainsworth@megamas.com</u> Web: <u>www.megamas.com</u>	M30	1999	British Military, Malaysian Military, Offshore Helicopter Aircrew, Passengers
Netherlands Den Oever	Falck Nutec Den Oever Email: <u>m.theunissen@falcknutec.nl</u> Web: <u>www.falcknutec.nl</u>	M1	2000	Offshore Helicopter Aircrew & Passengers
Malaysia Selangor	Construction and Industrial Safety Training Centre (CONSIST) Email: <u>mzh@consist.com.my</u> Web: <u>www.consist.com.my/</u>	M1	2000	Offshore Helicopter Aircrew & Passengers
Malaysia Johor	MSTS Asia Sdn. Bhd. Email: <u>abp@msts-my.org</u> Web: <u>www.msts-my.org</u>	M30	2001	Offshore Helicopter Aircrew & Passengers
Australia Nowra	Royal Australian Navy Email: <u>murray.roberts@defence.gov.au</u> Web: <u>www.navy.gov.au</u>	M30	2001	Australian Military
USA Florida	United States Navy, Pensacola Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> i/nsti/Pages/WaterSurvivalTraining.aspx	M40	2001	United States Navy


Country	Training Centre	Model	Year	Trainees
Japan Okinawa	United States Marine Corps, Camp Hansen Email: <u>alex.m.hernandez@usmc.mil</u> Web: www.usmc.mil	M40 Amphibious	2002	United States Marine Corps
USA Hawaii	United States Marine Corps, Kaneohe Bay Email: <u>alex.m.hernandez@usmc.mil</u> Web: <u>www.usmc.mil</u>	M40 Amphibious	2002	United States Marine Corps
USA Maryland	United States Navy, Patuxtent River Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> <u>i/nsti/Pages/WaterSurvivalTraining.aspx</u>	M40	2003	United States Navy
USA Connecticut	Survival Systems USA, Inc. Email: <u>mhanna@survivalsystemsinc.com</u> Web: <u>www.survivalsystemsinc.com</u>	Apache	2003	United States Army, Israeli Army
Germany Nordholz	German Navy Email: joergnotholt@bundeswehr.org Web: <u>www.deutschemarine.de</u>	M40	2003	German Navy
Australia Townsville	Australian Army, Lavarack Barracks Email: <u>nbirkett@careflight.org.au</u> Web: <u>www.army.gov.au</u>	M40	2003	Australian Army
USA Washington	United States Navy, Whidbey Island Email: ray.smith@med.navy.mil Web: www.med.navy.mil/sites/navmedmpte/nom i/nsti/Pages/WaterSurvivalTraining.aspx	M40	2003	United States Navy
USA California	United States Marine Corps, Camp Pendleton Email: <u>alex.m.hernandez@usmc.mil</u> Web: www.usmc.mil	M40 Amphibious	2003	United States Marine Corps
India Mumbai	Survival Systems India Email: <u>amarchand@audyworld.com</u>	M30	2004	Oil and Natural Gas Corporation (ONGC) Offshore Helicopter Aircrew & Passengers
South Korea Seoul	Eighth United States Army, 6 th Cavalry Brigade Email: <u>Robert.matheny@korea.army.mil</u>	M40	2004	United States Army
France Marseille	Bataillon de Marins-Pompiers Email: <u>lionelmoullet@aol.com</u> Web: <u>www.marinspompiersdemarseille.com</u>	M1	2004	Bataillon de Marins- Pompiers de Marseille
Malaysia Selangor	Construction and Industrial Safety Training Centre (CONSIST) Email: <u>mzh@consist.com.my</u> Web: <u>www.consist.com.my</u> /	M3	2004	Offshore Helicopter Aircrew & Passengers
USA Louisiana	Marine Survival Training Centre University of Southwestern Louisiana Email: <u>mstc@louisiana.edu</u> Web: <u>www.louisiana.edu/InfoTech/MSTC/</u>	M30	2005	United States Coast Guard, Offshore Passengers, Civilian Aircrew
USA California	United States Navy, Miramar Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> i/nsti/Pages/WaterSurvivalTraining.aspx	M40	2005	United States Navy
Norway Trondheim	Falck Nutec Email: <u>roar.orekasa@falcknutec.no</u> Web: <u>www.nutec.no</u>	M30	2005	Offshore Passengers, Civilian Aircrew



Country	Training Centre	Model	Year	Trainees
Norway Kristiansand	Sorlandets Seilende Skoleskibs Email: <u>kaarstein.brandal@sjoekurs.no</u> Web: <u>www.sjoekurs.no/</u>	M5	2005	Offshore Helicopter Aircrew & Passengers
USA North Carolina	United States Marine Corps, Camp LeJeune Email: <u>alex.m.hernanzez@usmc.mil</u> Web: <u>www.usmc.mil</u>	M40 Amphibious	2005	United States Marine Corps
USA Louisiana	Robert Shell Training Institute Email: <u>paul.mendel@shell.com</u> Web: <u>www.shelltraining.com</u>	M5	2005	Offshore Helicopter Aircrew & Passengers
USA Louisiana	Occupational Safety & Training Email: <u>bpaucoin@occu-safe.com</u> Web: <u>www.occu-safe.com</u>	M5	2005	Offshore Helicopter Aircrew & Passengers
USA Louisiana	Louisiana Technical College Email: <u>cmoore@ltc.edu</u> Web: <u>www.ltc.edu</u>	M5	2006	Offshore Helicopter Aircrew and Passengers
Norway Oslo	Falck Nutec Email: <u>terje.stensvold@falcknutec.no</u> Web: <u>www.nutec.no</u>	M30	2006	Offshore Helicopter Aircrew and Passengers
Denmark Esbjerg	Falck Nutec Email: <u>stig.petersen@falcknutec.dk</u> Web: <u>www.offshore-denmark.dk/172.html</u>	M30	2006	Offshore Helicopter Aircrew and Passengers
USA Louisiana	Grand Isle Shipyard Email: <u>bryan@gisy.com</u> Web: <u>www.gisy.com</u>	M5	2006	Offshore Helicopter Aircrew and Passengers
USA Louisiana	CSSI Email: <u>kjbenoit@safetytrainingacademy.com</u> Web: <u>www.safetytrainingacademy.com</u>	M5	2006	Offshore Helicopter Aircrew and Passengers
Canada Nova Scotia	Survival Systems Limited Email: <u>trish@survivalsystems.info</u> Web: <u>www.survivalsytemsgroup.com</u>	M40 Apache	2006	Military and Civilian Aircrew and Passengers
USA North Carolina	US Navy, Cherry Point Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> <u>i/nsti/Pages/WaterSurvivalTraining.aspx</u>	M40	2006	Military Personnel
USA Virginia	US Navy, Norfolk Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> <u>i/nsti/Pages/WaterSurvivalTraining.aspx</u>	M40	2006	Military Personnel
Indonesia Lakespra	Indonesian Air Force Email: <u>wawan@solusinet.id</u> Web:	M30	2007	Military Personnel
Chile Concón	Chilean Navy Email: <u>fdelbarrio@armada.cl</u> Web: <u>www.armada.cl</u>	M30	2007	Military Personnel
Egypt Alexandria	AAST&MT Email: <u>safety@aast.edu</u> Web: <u>www.aast.edu</u>	M5	2007	Marine Personnel



Country	Training Centre	Model	Year	Trainees
USA Alaska	Shell Oil Email: <u>paul.mendel@shell.com</u> Web: <u>www.shelltraining.com</u>	M5	2007	Offshore Personnel
Qatar Doha	Enertech Qatar Email: <u>kdc.dil@enertechqatar.com</u> Web: <u>www.enertechqatar.com/enertechqatar/</u>	M5	2007	Offshore Helicopter Aircrew & Passengers
Canada Nova Scotia	Nova Scotia Community College Email <u>lorne.macdonald@nscc.ca</u> Web: <u>www.nscc.ca</u>	М3	2007	Marine Personnel
USA Louisiana	Safety Management Systems Email: jtrahan@acadian.com Web: www.safetyms.com/site6.php	M30	2007	Offshore and Air Ambulance Personnel
Spain Rota	Spanish Navy Email: Web: <u>www.armada.mde.es</u>	M40	2007	Military Personnel
USA Texas	Occupational Safety & Training Email: <u>tgranger@occu-safe.com</u> Web: <u>www.occu-safe.com</u>	M5	2008	Offshore Helicopter Aircrew & Passengers
Abu Dhabi	Falck Nutec Email: <u>ds@falcknutec.co.uk</u> Web: <u>www.falcknutec.com</u>	M5	2008	Offshore Helicopter Aircrew and Passengers
Thailand Samutprakarn	Falck Nutec Email: <u>apeel@msts-my.org</u> Web: <u>www.falcknutec.com</u>	M5	2008	Offshore Helicopter Aircrew and Passengers
Nigeria Ipara	Falck Nutec Email: <u>ds@falcknutec.co.uk</u> Web: <u>www.falcknutec.com</u>	M30	2008	Offshore Helicopter Aircrew and Passengers
Vietnam Vung Tau	Falck Nutec Email: <u>roger@msts-my.org</u> Web: <u>www.falcknutec.com</u>	M5	2008	Offshore Helicopter Aircrew and Passengers
USA Texas	Falck Nutec Email: <u>ds@falcknutec.co.uk</u> Web: <u>www.falcknutec.com</u>	M5	2008	Offshore Helicopter Aircrew and Passengers
USA Kentucky	US Army Email: <u>william.h.feeney@soar.army.mil</u> Web:	M40	2008	Military Personnel
USA Kentucky	US Army Email: <u>william.h.feeney@soar.army.mil</u> Web:	Aircraft- Specific	2008	Military Personnel
Okinawa Japan	US Marine Corps Email: <u>alex.m.hernandez@usmc.mil</u> Web: <u>www.usmc.mil</u>	MPM	2008	Military Personnel
Poland Pniewskiego	Polish Navy Email: <u>k.kuszej@scantek.pl</u> Web: <u>www.navy.mw.mil.pl</u>	M5	2008	Military Personnel
USA Florida	US Navy, Jacksonville Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> <u>i/nsti/Pages/WaterSurvivalTraining.aspx</u>	M40	2009	Military Personnel



Country	Training Centre	Model	Year	Trainees
USA California	US Navy, Lemoore Email: <u>ray.smith@med.navy.mil</u> Web: <u>www.med.navy.mil/sites/navmedmpte/nom</u> <u>i/nsti/Pages/WaterSurvivalTraining.aspx</u>	M40	2009	Military Personnel
Indonesia Balikpapan	PT Samson Tiara Email: Web:	M5	2009	Offshore Aircrew
Russia Astrakhan	LUKOIL Email: Web:	M40	2010	Offshore Aircrew
Japan	Nissui Marine Industries Email: Web:	M30	2010	Offshore Aircrew
Australia Swansbourne	SASR Email: Web:	M40	2010	Military Personnel
79 METS™, 26 Countries				



METS[™] Clients (1989 – 1994)



1989 – Darwin, Australia North Australia Safety Centre METS[™] Model 3 (Prototype)



1990 – Den Helder, Netherlands Den Helder Training Centre METS[™] Model 30



1993 – Seria, Brunei *LTS Engineering* METS™ Model 30



1990 – West Sale, Australia *Red Alert* METS[™] Model 30



1991 – Bergen, Norway *Falck Nutec* METS™ Model 30



1994 – Jakarta, Indonesia *P.T. Samson Tiara* METS™ Model 30



METS[™] Clients (1994 – 1996)



1994 – Aberdeen, Scotland *Falck Nutec* METS™ Model 30



1994 – Perth, Australia Industrial Foundation for Accident Prevention METS™ Model 30



1995 – Jakarta, Indonesia *Jakarta Offshore Training Centre* METS™ Model 30



1995 – Gilze Rijen, The Netherlands Royal Netherlands Air Force METS[™] Model 30



1996 – Gilze Rijen, The Netherlands Royal Netherlands Air Force Apache Cockpit Modules (ACM[™])



1996 – Louisiana, USA Marine Survival Training Centre METS™ Model 30



METS[™] Clients (1996 – 1999)



1996 – Stavanger, Norway *Falck Nutec* METS™ Model 30



1997 – P'ohang, South Korea Republic of Korea Navy METS™ Model 30



1998 – Esbjerg, Denmark *Falck Nutec* METS™ Model 5



1998 – Rotterdam, Netherlands Maritiem Trainingscentrum B.V. METS™ Model 30



1999 – Connecticut, USA Survival Systems USA, Inc. METS™ Model 40



1999 – Nova Scotia, Canada Survival Systems Training Ltd. METS[™] Model 40



METS[™] Clients (1999 – 2000)



1999 – Teesside, UK *Falck Nutec* METS[™] Model 40 In 1994 replaced Model 30 moved to Aberdeen



1999 – Kaduna, Nigeria Nigeria Air Force Aeromedical METS™ Model 30



1999 – Washington State, USA United States Air Force METS[™] Model 40



1999 – Seoul, South Korea Eighth United States Army Apache METS™



1999 – Kuala Belait, Brunei *Megamas Training Centre* METS[™] Model 30



2000 – Den Oever, Netherlands *Falck Nutec* METS[™] Model 1



METS[™] Clients (2000 – 2002)



2000 – Selangor, Malaysia *CONSIST* METS™ Model 1



2002 – Nowra, Australia Royal Australian Navy METS™ Model 30



2002 – Okinawa, Japan United States Marine Corps MAET™ Model 40



2001 – Johor, Malaysia MSTS Asia Sdn. Bhd. METS[™] Model 30



2001 – Florida, USA United States Navy METS™ Model 40



2002 – Kaneohe Bay, Hawaii United States Marine Corps MAET[™] Model 40



METS[™] Clients (2003)



2003 – Maryland, USA United States Navy METS[™] Model 40



2003 – Townsville, Australia Australian Army METS[™] Model 40



2003 – Connecticut, USA Survival Systems USA, Inc. Apache METS™



2003 – Nordholz, Germany *German Navy* METS[™] Model 40



2003 – Washington, USA United States Navy METS[™] Model 40



METS[™] Clients (2004)



2004 – Marseille, France Bataillon de Marins-Pompiers de Marseille METS[™] Model 1



2004 – California, USA *United States Marine C*orps MAET™ Model 40



2004 – Selangor, Malaysia *CONSIST* METS[™] Model 3



2004 – Mumbai, India Survival Systems India METS™ Model 30



2004 – Seoul, South Korea *Eighth United States Army* METS[™] Model 40 & Apache



METS[™] Clients (2005)



2005 – Louisiana, USA *Marine Survival Training Centre* METS™ Model 30



2005 – Kristiansand, Norway Sorlandets Seilende Skoleskibs METS™ Model 5



2005 – California, USA United States Navy METS™ Model 40



2005 – Trondheim, Norway *Falck Nutec* METS[™] Model 30



2005 – Louisiana, USA Robert Shell Training Institute METS™ Model 5



2005 – Louisiana, USA Occupational Safety Training METS™ Model 5



METS[™] Clients (2006)



2006 – Louisiana, USA Louisiana Technical College METS™ Model 5



2006 – Esbjerg, Denmark *Falck Nutec* METS[™] Models 30 & 5



2006 – Louisiana, USA CSS/ METS™ Model 5



2006 – Oslo, Norway *Falck Nutec* METS[™] Model 30



2006 – Louisiana, USA Grand Isle Shipyard METS[™] Model 5



2006 – North Carolina, USA *United States Navy* METS[™] Model 40



METS[™] Clients (2007)



2007 – Norfolk, Virginia *United States Navy* METS™ Model 40



2007 – Concón, Chile *Chilean Navy* METS™ Model 30



2007 – Nova Scotia, Canada Nova Scotia Community College METS[™] Model 3



2007 – Alexandria, Egypt *AAST&MT* METS[™] Model 5



2007 – Kenai, Alaska *Shell* METS™ Model 5



2007 – Doha,Qatar *Enertech* METS[™] Model 5



METS[™] Clients (2008)



2008 – Thailand *Falck Nutec* METS™ Model 5



2008 – Nigeria *Falck Nutec* METS™ Model 30



METS[™] Clients (2008)



2008 – Louisiana, USA Safety Management Solutions METS[™] Model 30



2008 – Okinawa, Japan US Marine Corps. MPM METS™



2008 – Texas, USA *Occupational Safety & Training* METS™ Model 5



008 – Kentucky, USA *U.S. Army* METS[™] Model 40



2008 – Abu Dhabi *Falck Nutec* METS™ Model 5



2008 – Indonesia *Air Force* METS[™] Model 30



METS[™] Clients (2009 – 2010)



2009 – Houston, Texas *Falck Nutec* METS[™] Model 5



2010 – Balikpapan, Indonesia *PT Samson Tiara* METS[™] Model 5

Not Commissioned:

Lukoil Survival Systems Training SASR Nissui Marine Industries



METS[™] Clients (2009)



2009 – Poland *Polish Navy* METS™ Model 5



2009 – Florida, USA *U.S. Navy* METS™ Model 40



2009 – USA, California *U.S. Navy* METS™ Model 40



2009 – Spain Spanish Navy METS[™] Model 30



2009 – USA, North Carolina U.S. Marine Corps. METS[™] Model 40



2009 – Vietnam *Falck Nutec* METS™ Model 5



Excerpts listed below are taken from letters of reference received from a number of our METS[™] clients who have expressed their appreciation to Survival Systems for professionally delivering turnkey solutions to deliver life-saving ditching training. Components of our full spectrum services include project management and consulting, highest quality underwater escape trainers (the METS[™]), personnel-rated lift systems, compressors, dive gear, and environmental training equipment (i.e., wave ball, wind fans, personnel rescue hoist, water current jets, audio system, above and underwater camera systems), gantry works, training implementation programs, research and development, engineering services, infrastructure works, electrical works, and after sales service.

Arab Academy for Science and Technology and Maritime Transport – Alexandria, Egypt

When we decided to purchase a HUET simulator our final choice had to be Survival Systems Limited (SSL) Canada. Their Modular Egress Training Simulator (METS[™]) Model M5 best suited our desire to offer the most realistic training environment and highest fidelity available. 15 June 2008 – METS[™] Model 5 and 6,000 lb LORS – Ashraf Halawa – OPITO Program Manager

Grand Isle Shipyard, Inc. – Louisiana, USA

Survival Systems has been a great help in our success with the great service and professionalism they have shown.

12 June 2008 – METS[™] Model 5 & 6,000 lb LORS – Courtney Caldarera, Training Administrator

<u> Safety Management Systems – Louisiana, USA</u>

The METS[™] Model 30 by Survival Systems Limited (SSL) was the clear choice. 12 June 2008 – METS[™] Model 30 & 12,000 lb Standard LORS – Ed G. Mury, Vice President

Enertech Aviation & Maritime Academy – Doha, Qatar

We would strongly recommend Survival Systems Helicopter Simulators to any new or existing training providers; we are truly satisfied with the support and operation of the unit. 12 June 2008 – METS™ Model 5 & 6,000 lb LORS – KC Dil, President & CEO

United States Air Force – Washington, USA

On a Contractor Performance Assessment Report, Survival Systems rated "Exceptional" in all areas including Business Relations, Management of Key Personnel, Schedule, Cost Control, Quality of Products / Service.

19 April 2004 – METS™ Model 40 – MSgt Sid A. Price, Programs Requirements Manager

Construction and Industrial Safety Training Centre (CONSIST) Sdn Bhd – Selangor, Malaysia

... I feel the METS[™] is still the best system in the World ... 26 January 2004 – METS[™] Model 1 – Mior Zawari Hassan, Executive Chairman

Royal Australian Navy – Nowra, Australia

... a refreshing experience to deal with a company that will take ownership and pride ... 27 November 2002 – METS[™] Model 30 – Hamish Stuart, Site Manager

Eighth United States Army – Soeul, South Korea

.... It gives the pilot and crewmembers the confidence to survive ditching in dark murky water... 11 August 2002 – Apache METS™ – Captain Susan A Smeltzer

<u> Megamas Training Company Sdn Bhd – Kuala Belait, Brunei</u>

... very professional in all aspects of the order, starting from the delivery of the equipment, installation, commissioning, training our staff, documentation and after sales service ... 16 July 2002 – METS[™] Model 30 – Roger Ainsworth, General Manager



Republic of Korea Navy - P'Ohang, South Korea

... to express our sincere appreciation for your outstanding performance ... 23 December 1998 – METS[™] Model 30 – Commanding Admiral Ki Bong, Paik

Falck Nutec Centre for Safety - Holland, Malaysia, Norway, UK

... the safety and the well tested and tried out design and reliability are of utmost importance 10 February 1998 – METS™ Models 1, 30, and 40 – Derek Sinclair, Operations Manager

Industrial Foundation For Accident Prevention (IFAP) Training Centre - Perth, Australia

... when you are dealing with life saving training, the METS, is the only unit ... 10 February 1998 – METS™ Model 30 – Chris Ryrie, Manager

Marine Survival Training Centre – Louisiana, USA

... based on their international reputation with training facilities and the advanced capabilities 9 February 1998 – METS[™] Model 30 – Gerard L. Lund, Director





National Défense Defence nationale

Survival

Systems

12 Wing Headquarters Shearwater PO Box 5000 Station Main Shearwater NS B0J 3A0

NOV 2 1 2008

1000-2 (W Comd)

19 November 2008

Mr. Albert Bohemier President and CEO Survival Systems Limited 20 Orion Court Dartmouth NS B2Y 4W6

Dear Mr. Bohemier, Plant,

On behalf of the members of 12 Wing Shearwater, thank you for attending our 90th Anniversary celebration. Throughout the years, 12 Wing has undergone numerous transitions and has witnessed both changes to its name and its infrastructure. The Wing has also played an integral role in several challenging and important activities. Despite the difficulties associated with change and taxing situations, people have always provided the cornerstone for our successful endeavours. The occasion of the Shearwater 90th Anniversary dinner was another such momentous accomplishment and your participation contributed to its success.

It is with the utmost respect and sincerity that I thank you and personally acknowledge your support to the members of 12 Wing. Survival Systems Limited and Survival Systems Training have made a direct, lasting, and positive impact on the lives countless maritime helicopter aircrew and technicians. Whether 12 Wing flies the Sea King or the Cyclone, I hope the important bond between our organisations remains strong long into the future.

Once again, thank you for sharing this momentous occasion with the members of 12 Wing. Your support is, and always will be, greatly appreciated.

Sincerely,

J.B. Ploughman Colonel Wing Commander





Difficulties Most Commonly Encountered During An Aircraft Ditching Into The Water



Compilation of US Navy Research 1983 – 1987, A. Bohemier Survival Systems' Sophisticated Exit Technology was Developed to Address the Difficulties Encountered and Associated with Exits When Trying to Escape from a Ditching, Which Account for 1/3 of All Difficulties.



Training Evolved to Address Difficulties Most Commonly Encountered During a Ditching, Including:

- Hover Abandonment and Surface Evacuation
- Partial / Off-Angle Submersion
- Upright and Inverted Evacuation with Casualties
- Inverted Egress Exit In, Exit Out, Seat Stroked, Not Stroked
- Inverted with Spare Air Breathing Device
- Inaccessible and / or Blocked Exits and Movement to Secondary Exits / Cross Cabin-Port, Starboard / Forward, Aft of Initial Position
- Life Raft / Emergency Equipment Retrieval
- Night and Smoke Exercises
- > Aircraft Fire Extinguisher Exercises

All Exercises are Performed in a Safe, Authentic Training Environment That Results in Greater Success of Escape When Faced with an Actual Ditching



METS[™] Training Exercises



Emergency Evacuation Exercises Enhanced with Smoke



Jump Platform Used for Emergency Rig Evacuation



Trainee Using Breathing Apparatus



Safety Diver Assists a Trainee to Exit the METS™



METS[™] Training Exercises



Survival

Systems



METS™ Flooding and Rolling Over Underwater



Jettisoning Emergency Escape Exits from the METS™



Instructors and Safety Divers Supervise Trainees During all Phases of Training, Ranging from Simple to Complex Emergency Escape Procedures



METS[™] Training Exercises





METS™ Inverted Exercises



METS[™] Hover Abandonment Technique



Jettison and Egress the METS[™] Through Push-Out Window



The Perfect Storm



This Document and the Information Contained Herein is the Property of Survival Systems Limited



- Mainframe and Ribbing Accept any Type / Class of Emergency Escape Exit
- Grating Allows for Placement of Different Hardware Including Seats, Avionic Stations, Etc.
- Wall Mounted or Portable Emergency Escape Exit Storage Racks
- Mobile METS[™] Storage Cradle
- Bulkhead Systems / Variety of Partitions to Replicate Different Aircraft Interiors
- Cockpit and Cabin Configurations
- Lighting Systems Placement on Exits
- FRC / RIB Escape Simulator Adaptability
- > Amphibious Vehicle Adaptability
- Minimal Time (i.e., 15 Minutes) to Reconfigure Simple Reconfigurations



METS[™] Modularity



METS[™] Frame



Wall Mounted Panel Storage Racks



Panel Installation on METS™



Portable Panel Storage Rack



Portable Chairs Storage Rack



Modular Bulkhead Systems



METS[™] Modularity



Escape Ladder and Escape Hatch



Escape Exit Installation



METS[™] with High Mounted Fixed Wing Stub



METS[™] with Low Mounted Fixed Wing Stub



METS[™] Configurations – Training Floor Plan Samples















C130



H60



Instrument Panel and Console



Sea Hawk



METS[™] Configurations – Cabin





C130





SV90 Troop



Passenger Seating



Sea King Navigation Station



Lynx Mission Panel



- Passenger Seat Low Back [Single, Double]
- Passenger Seat High Back Folding [Single, Double]
- Passenger Seat High Back Non-Folding [Single, Double]
- Passenger Seat High Back with Arm Rests and Head Rest [Single]
- Troop Seat [Single, Double, Triple]
- Troop Commander Seat [Single]
- Non-Stroking Aircrew Seat [Single]
- Side Stroking Seat (10") [Single]
- Pilot & Co-Pilot's Seats
- Pilot and Co-Pilot Seats Stroking (10") with Armour Plating
- Swivel-based Seat



METS[™] Chair Samples – Cockpit



Bell 212 / 412



Stroking Seat



H60 Armour Plating



H-60



Armour Plating – Retracted



Chinook Armour Plating



METS[™] Chair Samples – Cabin



Single Folding High Back

Survival Systems has developed numerous aircraft specific seats for various clients around the world.



Single Low Back



High Back Seat with Arm Rests and Head Rest

We can develop almost any seat required by a client to ensure the training in the METS[™] is authentic.



Double High Back H60 Troop



Side Mounted Stroking Seat

To date, Survival Systems has manufactured over 50 different customized seats.



Troop Commander Seat


- Push-Out Window
- Push-Out Window with Ledge
- Push-Out Window with Bubble
- Push-Out Window with Lighting System
- Mechanical Window
- Simple Mechanical Door
- Complex Mechanical Door
- Commercial Fixed Wing Exit
- Complex Mechanical Door with Push-Out
- Complex Mechanical Door with Simple Push-Out
- Complex Mechanical Door Sliding with Two (2) Changeable Mechanisms
- Combination Exits
- Blank Panels with or without Cut Out



Survival

Systems

METS[™] Emergency Escape Exit Samples – Cockpit



Aerospatiale Alouette

Boeing Labrador

Survival Systems Has Manufactured 175+ Different Exit Replicas.



Sikorsky UH60

Westland Lynx



METS[™] Emergency Escape Exit Samples – Cabin



Survival

Systems

Sikorsky S-61 Raft Encasement Can Accommodate An Aviation Life Raft For Authentic Training Simulation



Bell 212 Cabin



Bell 206 Cabin



BO 105 Cabin



Labrador Push-Out Bubble Window



Bell UH 1 Cabin



METS[™] Combination Emergency Escape Exits Samples



Puma / BO-105 / UH-1 Cockpit Door Combo



Exit Release Mechanism for Puma



Exit Release Mechanism for BO-105



Exit Release Mechanism for UH-1

One Emergency Escape Exit fitted into one METS[™] panel can be used to replicate a combination of different exits. To train with different exits, simply move the exit release mechanism to the appropriate location to replicate where the actual mechanism would be found on the real helicopter.



UH-1 / Lynx Cabin Door Window



H-53 Cabin Mechanical Door with H-53 Push-Out Window



METS[™] Emergency Escape Exits Details



Exit Mechanism



Exterior Handle



Static Pin Block



METS[™] Escape Lighting Systems and Universal Escape Exit



Emergency Egress Lighting System





Universal Escape Exit



Helicopter Emergency Egress Lighting System

The System

Survival Systems Limited developed the Emergency Egress Lighting (EEL) system for the United States Coast Guard's H60 Jayhawk helicopter to provide them a visual aid to locate exits during an emergency.

- The system consists of a power control module, exit lighting string, and power cable.
- In operation, the exit lighting system will activate automatically in the event of an emergency i.e.; impact exceeding 10 g from any direction, roll over exceeding 90° from vertical, or immersion in water.

Features

- Auto or manual switch mode
- Press-to-test button verification feature
- Highly visible yellow green light optical characteristics
- Exit lighting strings can be customized to fit any exit design

Specifications

- Automatic Activation Methods
 - Immersion in fresh or salt water
 - Inversion greater than 90° from vertical for a minimum of two (2) seconds
 - Impact greater than 10 g in any direction for a minimum duration of 40 msec
- Manual Activation Method
 - Controller mounted toggle switch
- Submergibility
 - Operable up to 100 feet water depth (43 psi)
- Operation Temperature
 - Air: 30° F to 112° F (-1.1° C to 44° C)
 - Water: 30° F to 112° F (-1.1° C to 44° C)
- Storage Temperature
 - ◆ -20° to 140° F (-28° C to 60° C)
- Electrical Characteristics
 - Power Source: 6 C cell Alkaline non-rechargeable battery pack
 - Battery pack voltage: 9.6 volts
 - Battery pack capacity: 660 milli-amp hrs@68° F (20° C)
 - Light string current: 1.0 amps
- Optical Characteristics
 - Light output color: yellow green
 - Predominant wavelength of light: 565 nanometers
 - LED density: 3.3 LEDs per inch of lighted tube
- Total Lighted Length
 - Light string (standard): 36 inches (914 mm)
 - Light string (optional): 54 inches (1372 mm)











METS[™] Training Aids



Classroom Egress Trainer Used to Demonstrate Egressing



METS[™] Search and Rescue Hoist







SWIMMER[™] (Shallow Water Initial Memory Mechanical Exit Release)



Gyroscopic Effect of the Sea State



METS[™] Training Aids



Wave Making Device



Wet Winch



Lights / Cameras on METS™



Audio



Rosco Fog Machine 1600



Back Up Generator



Enhanced Communications Include Video Display, Recording, and Ability to Talk to Divers



METS[™] Training Aids – Shallow Water Egress <u>Trainer (SWET)</u>



Survival

Systems

Shallow Water Egress Trainer (SWET) Used for Familiarization Training and / or Spare Air Training



SWET and Intermediate Passenger Helicopter Aircrew Breathing Device (IPHABD) Training at United States Marine Corps Camp Hansen, Japan



Two Students Being Trained Concurrently at the USMC Camp Hansen Base



Shallow Water Egress Trainer (SWET[™]) Clients Worldwide (Page 1 of 3)

LOCATION	TRAINING CENTRE	YEAR
Canada, Nova Scotia	Survival Systems Training Limited	1987
UK, Teesside	Nutec Centre for Safety Limited	1995
Pakistan, Karachi	Commander Naval Station	1996
USA, Louisiana	USL Marine Survival Training Centre (MSTC)	1996
Norway, Stavanger	Nutec Stavanger A/S	1996
USA, Florida	Naval Operational Medicine Institute / Code 06	1997
Australia, Albatross	Royal Australian Navy Training Centre (x2)	1997
Netherlands, Gilze Rijen	Royal Netherlands Air Force (RNLAF)	1997
Netherlands, Ymuiden	Royal Dutch Lifeboat Association	1997
Brunei, Seria	LTS Training Centre Sdn. Bhd.	1997
Indonesia, Merak	P.T. Samson Tiara	1997
USA, Ft Campbell, KY	US Army (x2)	98 - 00
USA, Ft Rucker, AB	US Army Soldier Systems Command	1998
Bahamas, Nassau	US Embassy	1998
Canada, British Columbia	Rescue Canada	1998
Denmark, Esbjerg	Esbjerg Brandskole A/S	1998
S Korea, P'ohang	Republic of Korea Navy	1998
USA, Connecticut	Survival Systems Training, Inc.	1998
Malaysia, Selanger Darul Ehsan	Satang Jaya SDN. BDH. (x2)	98 - 02
France, La Seyne-Sur-Mer	Wilco International (x2)	1999
UK, Scotland	Nutec Centre for Safety Limited	1999
USA, Washington	US Air Force, Fairchild AFB (x2)	1999
Nigeria, Kaduna	Aerospace Medical Centre	1999
S Korea, Seoul	6 th Cavalry Brigade, Eighth US Army (x2)	99 - 00
Brunei, Kuala Belait	Megamas Training Centre	1999
USA, Alabama	US Air Force (x3)	
Puerto Rico	US Army – F4 Division	
USA, Georgia	US Air Force	
USA, California	Aqua Lung / US Divers	2000
Germany, Nordholz	German Navy (x3)	2001
USA, Oregon	US Coast Guard	2001
USA, Kodiak, Alaska	US Coast Guard (x2)	2001
USA, Sitka, Alaska	US Coast Guard	2001
S Korea, Seoul	I-52, Eighth United States Army	2001
USA, Florida	US Coast Guard	2001
USA, Oklahoma	Federal Aviation Administration	2001
Japan, Camp Zama	US Army	2001
Germany, Giebelstadt	US Army	2002
France, Saint-Pierre et Miquelon	Association pour la Formation Continué	2002
Japan, Okinawa	US Marine Corps (x3)	2002
USA, Hawaii	US Marine Corps (x3)	2002
USA, California	US Marine Corps (x3)	2002
USA, North Carolina	US Marine Corps (x3)	2002
USA, San Francisco	US Coast Guard	2002
USA, Alabama	US Coast Guard	2002



LOCATION	TRAINING CENTRE	YEAR
USA, South Korea	160 th SOAR, USFK	2002
Japan, Kadena	US Air Force Base	2002
Finland, Lohja	Meriturva [Maritime Safety Training Centre] (x2)	02 - 04
Iceland, Keflavik	US Air Force Base	2002
Taiwan, Taipei	Young Ararat Enterprises	2002
USA, North Carolina	US Coast Guard	2003
USA, Alaska	National Park Service	2003
USA, Florida	US Coast Guard	2003
USA, Florida	US Air Force	2003
USA, Michigan	US Coast Guard	2003
USA, Washington	US Coast Guard	2003
USA, Arizona	US Air Force (x2)	03 - 04
USA, Alabama	US Army (x2)	2003
Australia, Townsville	Australian Army (x2)	03 – 04
USA, Texas	US Coast Guard	2003
USA, North Carolina	US Coast Guard (x2)	03 - 04
India, Mumbai	Survival Systems India	2004
USA, California	US Coast Guard	2004
Jamaica, Kingston	US Embassy	2004
USA, Nevada	US Air Force	2004
Saudi Arabia, Al-Khobar	REDA Trading and Development	2004
Japan, Tokyo	US Air Force	2004
Russia, Sakhalinsk	Vega Training Centre (x2)	2005
USA, Virginia	Flight Concepts	2005
USA, Florida	US Air Force	2005
USA, Massachusetts	US Coast Guard Air Station	2005
USA, Michigan	US Coast Guard Air Station	2005
USA, Hawaii	US Coast Guard	2005
USA, Illinois	United States Property and Fiscal Office	2005
USA, Michigan	US Coast Guard	2005
Norway, Trondheim	NUTEC	2005
Norway, Kristiansand	Sorlandets Seilende Skoleskibs	2005
USA, Louisiana	Shell	2005
USA, Louisiana	Occupational Safety & Training	2005
USA, Louisiana	A School Productions	2005
USA, Louisiana	Louisiana Technical College	2006
USA, Louisiana	Consulting & Safety Specialists	2006
Sweden, Alvsjo	Scandinavian Safety Training Centre	2006
USA, Idaho	Department of the Interior (SWET™ IV)	2006
USA, Miami	US Coast Guard Air Station	2006
USA, Louisiana	Occupational Safety & Training (SWET™ IV)	2006
USA, Louisiana	Grand Isle Shipyard	2006
USA, Pensacola	US Navy (MSWET™)	2006
Puerto Rico, Aguadilla	US Air Force (SWET™ II)	2006



Shallow Water Egress Trainer (SWET[™]) Clients Worldwide (Page 3 of 3)

LOCATION	TRAINING CENTRE	YEAR	
Chile, Vina del Mar	Chilean Navy (SWET™ II)	2006	
Japan, Tokyo	Japanese Air Self Defense Force (SWET™ IV)	2007	
USA, Washington DC	Special Service Division, Communications Center	2007	
Canada, Ontario	CFB Petawawa (SWET™ II)	2007	
Switzerland, Bern	Swiss Army (SWET™ II) (x2)	2007	
Egypt, Alexandria	AAST&MT (SWET™ II)	2007	
USA, Florida	Pensacola Navy Base (MSWET™) (x2)	2007	
Canada, Nova Scotia	NSCC (SWET™ II)	2007	
Spain	Spanish Navy (x2) 20		
USA, Michigan	Air Station Traverse City (SWET™ III) 200		
USA, Georgia	No. 4 CG Air Station (SWET™ II) 2		
USA, Kentucky	No. 2 USPFO Fort Kentucky (SWET™ II) 2		
USA, New York	Ronkonkoma (SWET™ II)	2008	
USA, Connecticut	Survival Systems USA, Inc. (MSWET™)	2008	
USA, Virginia	No. 3 BMC (SWET™ III)	2008	
USA, Texas	No. 1 Air Station (SWET™ III)	2008	
USA, Illinois	Chicago Fired Department (SWET™ II)	2008	
USA	No. 2 Weide Army Airfield (SWET™ III)	2008	
USA, Washington DC	SSD-SPEC Services Division (SWET™ III)	2008	
Scotland, Aberdeen	Falck Nutec (SWET™ II)	2008	
USA, Oregon	USCG Air Station North Bend (SWET™ II)	2008	
USA, Florida	Eglin AFB (SWET™ II)	2008	
USA, Louisiana	USCG Air Station New Orleans (SWET™ II)	2008	
USA, Oregon	102 CST (WMD) (SWET™ II)	2008	
USA, New York	U.S Air National Guard, West Hampton Beach (SWET™ III)		
Canada, Ontario	CFB Petawawa (SWET™ II)		
USA, Oklahoma	FAA, Oklahoma City (SWET™ III)	2008	
USA, New York	103 rd Rescue SQ, West Hampton Beach (SWET™ II)	2008	
USA, California	Moffett FAF, (SWET™ II) (x2)	2008	
USA, Nevada	Nellis Air Force Base (SWET™ III)	2008	
USA, Louisiana	5th Aviation Battalion (SWET™ II)	2008	
USA, Georgia	USCG MSST 91108 (SWET™ II)	2008	
USA, Florida	USCG MSST 91114 (SWET™ III)	2008	
USA, Georgia	3/160RH SOAR (A) (SWET™ II) (x 2)	2008	
USA, Colorado	Peterson Air Force Base (SWET™ III)	2009	
USA, Hawaii	USCG ISC (SWET™ II)	2009	
USA, Alaska	USCG MSST (SWET™II)	2009	
USA, Florida	Miami-Dade Fire Rescue Dept. (SWET™ II)	2009	
USA, California	CG TAcLET PACAREA (SWET™ II)	2009	
Canada, Nova Scotia	Survival Systems Training (MSWET™)	2009	
Canada, Newfoundland	Survival Systems Training (MSWET™)	2009	
More than 150 SWET™s Sold to Commercial and Military Clients in More than 30 Countries			



METS[™] Maintenance Equipment and Training



METS[™] Toolkit



METS[™] Safety Ladder



METS[™] Spares Kit



METS[™] Maintenance Training



- Extensive Years of Combined Technical and Training Expertise
- Project Management
- Technical Delivery
 - ♦ METS[™] Construction
 - Delivery to Site
 - Installation
 - Operation
 - Maintenance Training
 - Maintenance and User Manuals Handover
 - Annual Maintenance, Refresher Maintenance Training, Extended Warranty Option
- Training Delivery
 - Aircraft Ditching Training
 - Aircraft Ditching Training Instructor Curriculum Handover
 - Refresher Train-the-Trainer Option
 - Annual Audit Option



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METS[™] Model 12000 XGH[™]/BXGH[™] Xross Gantry Hoist

The System

In pursuit of continuous improvement and technological leadership, Survival Systems Limited has developed the METS[™] Model 12000 XGH[™] handling system. The system provides the client with the highest level of safety, reliability, and user friendly options that is available for aircraft ditching training today. The XGH[™] monitoring and expandable control functions offer the client accurate, repeatable, and document-able training routines, as well as the ability to control and sequence other training devices such as wind, waves, rescue hoist systems, and other environmental variables for a complete and state-of-the-art training system.

- ➤ The METSTM Model 12000 XGHTM is a cross gantry hoisting system and features dual lifting mechanisms, integrated METSTM remote air brake system, user settable variable ditching speeds, advanced ditching monitoring, effects sequencing and control, as well as a pneumatically operated redundant retraction system (RRS) to mitigate the risk of power failures during critical (submerged) periods of the helicopter underwater escape training (HUET) training cycle.
- The system is a cost effective, retrofit design for replacing aging hoist system, is very easy to use, and can be installed indoors, outdoors, in pre-existing or new facilities as required.

Features

- When mounted on a 24,000 lbs SWL structure, the XGH[™] is fully compliant with all industry personnel lift guidelines and standards, including ASME B30 series, EN 13000 series, applicable CSA guidelines, and NAVFAC P-307. The Model XGH[™] is a 24,000 lbs static lift system de-rated by 50% to a 12,000 lbs personnel working load.
- Complete duality in variable frequency drive lifting mechanisms, VFDs (2), motors (2), gear boxes (2), drums (2), and cables (2). Each system is capable of independently holding and handling the load through the XGH leveling block system.
- Additional Safety Features include: Independent motor brakes (2) Pneumatically Operated Redundant Retract System (1) – Integrated Electrical Ground Fault Personnel Protection (1) – Radio Remotes (2) Pendant Crane Control (1) – User Friendly Operator Interface and On-Screen Guide (1) - Operator Training – Installed at Customer's Site.

Specifications

- Operating Capacity
 - 5454 Kg (12000 lbs) Gross Personnel-Lift
 - Sed with: METS[™] Model 1, 3, 5, 30 and 40, Apache METS[™] and MPM
- Trolley Travel
 - 10.7m (35 t) from service platform area of gantry outwards
- ▶ <u>Lift</u>
 - 6.1m (20 ft) Nominal minimum, and adjustable for safety in more shallow depth pools.

Operating Speed

- Slow raise / lower 3.0m/min (9.8 ft/min)
- Fast raise 10m/min (32.8 ft/min)
- Available ditching speed 19-30 m/min (62 98.4 ft/min) adjustable through operator interface
- Recommended ditching speed 20m/min (65.6 ft/min)
- Traverse slow 3.0m/min (9.8 ft/min)
- Traverse fast 10m/min (32.8 ft/min)
- Electrical Interface
 - 46kVA, 3-phase 50-60 Hz, 380-500 VAC service, TN/TT or IT systems



XGH[™] and BXGH[™] Lifting Motors and Gearboxes



Bridge Motor, Gearbox and Encoder Bridge Controls/Air/ Water/Electrical



METS[™] Model 12000 SmartJib[™] LORS



Fail-Safe Leveling Plate Mechanism



METS[™] Model 12000 SmartJib[™] LORS

The System

In pursuit of continuous improvement and technological leadership, Survival Systems Limited has developed the METS[™] Model 12000 SmartJib[™] LORS (Launch, Operation and Recovery System). The system provides the client with the highest level of safety and user friendly options that is available for aircraft ditching training today. The SmartJib[™] monitoring and control functions offer the client accurate, repeatable, and documented training routines, as well as the ability to control and sequence other training devices such as wind, waves, fog, lighting and sound for a complete and state of the art environmental simulation training system. The system is currently under review by DNV (Det Norske Veritas) as a worldwide certified personnel handling system for aircraft ditching training.

- ➤ The METSTM Model 12000 SmartJibTM LORS is a freestanding handling system and features dual lifting mechanisms, integrated METSTM remote air brake system, user settable variable ditching speeds, advanced ditching monitoring, effects sequencing and control as well as a Redundant Retract System (RRS) to eliminate the dependence of electrical power in critical training periods.
- The assembly is a cost effective, space saving design, very easy to use and can be installed indoors, outdoors, in pre-existing or in new facilities as required by the client's specific needs.

Features

- Fully certified by DNV with industry personnel lift guidelines, including EN 13852, API 2C, NAVFAC P-307, and DNV Rules for Certification of Lifting Appliances, The Model 12000 SmartJib[™] LORS is a 54000 lbs static lift system de-rated to 12000lbs dynamic condition safe personnel working load capacity for lifting training devices in all weather conditions with corresponding LORS foundation. (Typical design provided by Survival Systems for integration to existing facilities or new builds)
- Independent motors (2), gear boxes (2), drums (4), cables (4). Each cable is capable of independently holding the load through an innovative leveling plate system.
- Additional Safety Features include: Independent motor brakes (2) Redundant Air Powered Emergency Retract System (1) – Integrated Electrical Ground Fault Personnel Protection (1) – Radio Remotes (2) and Pendant Crane Control (1) – User Friendly Operator Interface and On-Screen Guide (1) - Operator Training – Installed at Customer's Site.

Specifications

- Operating Capacity
 - 5454 Kg (12000 lbs) Dynamic Environment Gross Personnel-Lift
 - Sed with: METS[™] Model 1, 3, 5, 30 and 40, Apache METS[™] and MPM
- Overall Dimensions
 - ♦ 6.7m (L) x 1.8m (W) x 6.0m (H)
 - [22 ft (L) x 6.0 ft (W) x 19.6 ft (H)]
- Boom Reach
 - ♣ 4.2m (13.8 ft) from edge of pool (based on foundation being 305mm (1 ft) from pool edge)
- Load Travel
 - 9.2m (30 ft) Nominal, and adjustable for safety in more shallow depth pools
- Rotation
 - 300° standard (150° left or right from center training position)
- Rotation Mechanism
 - Powered slewing with programmable travel stops c/w obstacle avoidance parameters
- Emergency Retract
 - Independent pneumatic retraction system.
- Operating Speed
 - Slow raise / lower 3.0m/min (9.8 ft/min)
 - Fast raise 10m/min (32.8 ft/min)
 - Available ditching speed 19-30 m/min (62 98.4 ft/min) adjustable through operator interface
 - Recommended ditching speed 20m/min (65.6 ft/min)
- Electrical Interface
 - 46kVA, 3-phase 50-60 Hz, 380-500 VAC service, TN/TT or IT systems



Survival

Systems

METS[™] Model 6000 LORS (Launch, Operation, and Recovery System)





METS[™] Model 6000 Launch, Operation, and Recovery System (LORS)

The System

In pursuit of continuous improvement and technological leadership in training, Survival Systems Limited has developed the METS[™] Model 6000 LORS (Launch, Operation and Recovery System) to offer clients in the METS[™] Model 1, 3, and 5 range with a truly redundant, personnel-rated handling system to deliver aircraft ditching training.

Features

- Redundant wirerope hoists, dual motors, variable speed drives, wire-rope drums and stainless lifting cables, 3-point safety links, mitigating risk of single point failures.
- Fully compliant with industry de-rating requirements for personnel handling devices, the Model 6000 is actually a 5454 Kg (12000 lbs) capable handling system that is used at 50% capacity or less at all times.
- ➤ The system is delivered with integrated METSTM remote air braking system, dual speed raise / lower control, METSTM brake release in both pendant control and wireless controls.
- Additional features include: Integrated electrical ground fault protection, programmable limits, pool friendly materials and lubricants, and Operator training Installed at Customer's Site.
- The assembly is very cost effective, in a space saving design, easy to use and can be installed indoors, outdoors, in pre-existing or in new facilities as required by the clients' specific needs.
- Please note that features and capacity of the Model 6000 are comparable to two variable speed 6000 lbs overhead traveling hoists synchronized together, including the cost of the steel support structure!!

Specifications

- Operating Capacity
 - 2727 Kg (6000 lbs) Gross Personnel Rated lifting.
 - Sed with: METS[™] Model 1, 3, and 5
- Overall Dimensions
 - ✤ 6.5m (L) x 2.3m (W) x 5.4m (H)
 - [21.5 ft (L) x 7.5 ft (W) x 17.7 ft (H)]
- Boom Reach
 - 3.5m (11.5 ft) from edge of pool (based on foundation being 305mm (1 ft) from pool edge)
- Load Travel
 - 7.0m (23 ft) Nominal, and adjustable for safety in more shallow depth pools
- Rotation

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 \triangleright

- 210° standard (105° left or right from center training position)
- Manual lock for training position
- Rotation Mechanism
- Manual
- Emergency Retract
 - Independent pneumatic retraction system (acc. pr EN 15011).
- Operating Speed
 - Slow raise / lower 3.0m/min (9.8 ft/min)
 - Fast raise 10m/min (32.8 ft/min)
 - Ditching speed 19-30m / min (62 98.4 ft/min) adjustable at client system startup
 - Recommended ditching speed 20m / min (65.5 ft/min)
- Electrical Interface
- 23.5kW, 3-phase 50-60 Hz, 380-500 VAC service, TN / TT. (IT Systems by special request.)
 - Optional Equipment
 - Retrofit pool deck mounting kits for existing facilities
 - Mechanically assisted rotation



METS[™] Model 9000 Twin Gantry Hoist (TGH[™])

The System

In pursuit of continuous improvement and technological leadership, Survival Systems Limited has developed the METS[™] Model 9000 Twin Gantry Hoist (TGH[™]) handling system. The system provides the client with the highest level of safety, reliability, and user friendly options that is available for aircraft ditching training today. The TGH[™] monitoring and expandable control functions offer the client accurate, and repeatable training routines. Options for the system includes documentable training routines, as well as the ability to control and sequence other training devices such as wind, waves, rescue hoist systems, and other environmental variables for a complete and state-of-the-art training system.

- ➤ The METSTM Model 9000 TGHTM is mounted above the pool and features dual lifting mechanisms, integrated METSTM remote air brake system, user settable variable ditching speeds, as well as a pneumatically operated redundant retraction system (RRS) to address the risk of power failure during critical (submerged) periods of the helicopter underwater escape training (HUET) training cycle.
- The system is a cost effective, retrofit design for replacing aging hoist systems, is very easy to use, and can be installed indoors, outdoors, in pre-existing, or in new facilities as required.

Features

- When mounted on an 18,000 lb SWL structure, the TGH[™] is fully compliant with all industry personnel lift guidelines and standards, including CE standards EN-13001-1:2004, EN-60204-32, EN-13001-2:2004, EN-13852-1:2004, EN-14502-1:2005, FEM 1.001.3-1998 and DNV-05-0101. The Model TGH[™] is an 18,000 lb static lift system derated by 50% to a 9,000 lbs personnel working load.
- Complete duality in variable frequency drive lifting mechanisms, VFDs (2), motors (2), gear boxes (2), drums (2), and cables (4). Each system is capable of independently holding and handling the load through the TGH[™] leveling block system.
- Additional Safety Features include: Independent motor brakes (2) Pneumatically Operated Redundant Retract System (1) – Integrated Electrical Ground Fault Personnel Protection (1) – Radio Remotes (2) Pendant Crane Control (1) – User Friendly Operator Interface and On-Screen Guide (1) – Operator Training – Installed at Customer's Site.



METS[™] Model 9000 Twin Gantry Hoist (TGH[™])

2.9m (9.5ft) L x 3.2m (10.5ft) W x 0.5m (1.6ft) H

0.7m (2.3ft) L x 0.54m (1.8ft) W x 0.46m (1.5ft) H

Specifications

*	Operating Capacity:	4082Kg (9000lbs) Gross Personnel Lift

- Hoist Dimensions:
- Trolley Dimensions:
- Hoist Weight:
- Trolley Weight:
- Maximum Lift: 10m (32.8ft)
- Traverse Speeds: 3m/min (9.8ft/min) and 10m/min (32.8ft/min)
- Hoisting Speeds
 - Slow Lower: 3m/min (9.8ft/min)
 - Slow Raise: 3m/min (9.8ft/min)
 - Ditching Speed: Variable 15 28m/min (49.2 91.9ft/min)
- Electrical Requirements
 - Voltage: 3 Phase 380-500VAC
 - System Type: TN/TT
 - Frequency:
- 50-60Hz

3929Kg (8662lbs)

136Kg (300lbs)

- Power Consumption: Max 32kW, typical
- Interrupting Capacity: 20kA, rms
- Compressed Air Requirements
 - 1 each 300cf DOT-2400 CGA-346 cylinder. Max 2500psi, Min 2000psi or equivalent
 - 1 each service air compressor. 5.5scfm @ 90psi minimum



METS[™] Exterior and Interior Gantry and Hoist Systems



Megamas Training Company, Brunei Gantry Spans 47 Feet (14.3 Metres)



MSTC, Louisiana, USA Gantry Spans 42 Feet (12.8 Metres)



METS[™] Gantry and Hoist Systems



US Navy, Washington State



US Navy, Pensacola, Florida



Lifting System Clients (2005 – 2006)



2004 – Marseille, France Bataillon de Marin Pompiers 4000 Lb Standard Jib



2005 – New Iberia, Louisiana Occupational Safety Training 6000 Lb Standard Jib



2006 – Galliano, Louisiana Grand Isle Shipyard 6000 Lb Standard Jib



2005 – Miramar, California United States Navy 12000 Lb SmartJib™ (R)



2006 – Morgan City, Louisiana Louisiana Technical College 6000 Lb Standard Jib



2006 – Dartmouth, Nova Scotia Survival Systems Limited 12000 Lb SmartJlb™ (R)



Lifting System Clients (2006–2007)



2006 – Cherry Pt., North Carolina United States Navy 12000 Lb SmartJib™ (R)



2007 – Alexandria, Egypt AAST&MT 6000 Lb Standard Jib (R)



2007 – Doha, Qatar *Enertech* 6000 Lb Standard Jib



2007 – Norfolk, Virginia United States Navy 12000 Lb SmartJib™ (R)

2007 – Con Con *Chilean Navy* 12000 Lb SmartJib™ (R)

2007 – Dartmouth, Nova Scotia Survival Systems Limited 12000 Lb BXGH™ (R)

Lifting System Clients (2008)

2008 – Lafayette, Louisiana Safety Management Systems 12000 Lb Standard Jib (R)

2008 – Okinawa, Japan United States Marine Corps 12000 Lb XGH™ (R)

2008 – Spokane, Washington United States Air Force 12000 Lb Standard Jib (R)

2008 – Brookshire, Texas Occupational Safety Training 6000 Lb Standard Jib (R)

2008 – Fort Campbell, Kentucky United States Army 12000 Lb SmartJib™ (R)

2008 – Kaneohe Bay, Hawaii United States Marine Corps 12000 Lb XGH™ (R)

Lifting System Clients (2008 – 2009)

2008 – Lejeune, North Carolina United States Marine Corps 12000 Lb XGH™ (R)

2009 – Jacksonville, Florida *United States Navy* 12000 Lb SmartJlb™ (R)

2009 – Pniewskiego *Polish Navy* 6000 Lb MBXGH™ (R)

2009 – Lemoore, California *United States Navy* 12000 Lb SmartJib™ (R)

2009 – Pendleton, California United States Marine Corps 12000 Lb XGH™ (R)

2009 – Rota *Spanish Navy* 12000 Lb SmartJIb (R)

Lifting System Clients (2009 – 2010)

2009 – Esbjerg, Denmark *Falck Nutec* 9000 Lb TGH™ (R)

Not Commissioned

Lukoil SASR

Lifting Systems Clients Worldwide

Survival

Systems

STST Training Aids Water Jets - Wind Fans - Wave Ball

Survival

Systems

Underwater jets create currents for realistic sea training exercises.

Fans create realistic sea state and storm conditions and are capable of +140 km/hr winds at the mouth of the fan, and 76 km/hr winds mid-pool.

Waves add to the realistic survival scenario.

STST Training Aids Sound System

Surround sound systems are fully programmable and incorporate sight plane fly-bys and helicopter hovers to enhance rescue scenarios.

Vehicle-based training is supported by battle soundtracks to enhance realism.



STST Training Aids Overhead Catwalk



The Overhead Catwalk option incorporates a simulated helicopter with rescue hoist, jumping platform, and "hell hole" for advanced rescue scenarios.









The Helicopter Rescue Training Simulator (HRTS) includes a realistic hoisting station complete with downdraft fan and deluge system.



USAF HRTS installed at Fairchild Air Force Base

STST Training Aids Personnel Rescue Hoist with Rotor Downwash / Deluge Fan Systems



Survival Svstems

> Survival Systems' Personnel Rescue Hoist can be integrated with Downwash Fans to simulate rotor wash during hoisting exercises using rain nozzles around the fan mouth. These 10hp fans are capable of 100km winds at the mouth of the fan, and 25km winds at the water surface.

> 7.5kW Variable output, fibre reinforced nylon rotor system, individual earth fault and vibration fault protection, programmable routines and triggering with client's or SSL's rescue hoisting system, integrated to SmartJib[™] and / or Cross Gantry Hoist (XGH[™]) lift system controls



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Survival Systems Limited

Environmental Simulations Equipment Personnel Rescue Hoist



Variable speed, hoisting system 0-40m/min, 1500lbs nominal, de-rated to 750lbs for personnel lift requirements. Latching backup brake system, 24VDC controls, GFCI and insulation monitoring integrated. 3/8" nonrotational stainless steel wire rope, lift 35 feet, low headroom. Mountable to ceiling steelwork, or Rescue Trolley on Survival Systems' Bridge Crane or Modular Heli Rescue Simulators. System fully integrated to either Survival Systems' SmartJib[™] or Cross Gantry Hoist (XGH[™]).







STST Training Aids Jumping Platform



Multiple levels of jumping platforms increase the reality of the training experience.



STST Training Aids Special Effects Lighting

Search lights





Underwater Lighting







Strobe Light/Lightning



Survival Training Simulation Theatre (STST) Training Aids Web Camera System



Underwater Camera with Waterproof Enclosure





Toughnote M15 Military Grade Laptop Computer

The Survival Training Simulation Theatre (STST) Webcam system allows recording and reviewing your training sessions from any computer connected in the local network or over the Internet.

Underwater camera(s) can be installed up to 5 meters (16.4 feet) deep at the bottom of the pool or inside the Modular Egress Training Simulator (METS™) to capture activities of trainers and trainees.

The camera(s) produce crisp high resolution color images (up to 3 megapixel, 2048 x 1538 pixel). With a super-wide-angle lens, one camera covers a large part of the pool.

The STST Webcam system uses robust, weather-proof network camera(s). All cable connections are made with outdoor CAT5e Ethernet cable. The cameras are powered over the Ethernet cable from the network switch.

A ruggedized notebook designed for extreme environmental conditions can be used for immediate feedback on the pool deck. The notebook connects wirelessly to the base station to watch live video and replay recorded sequences. This military grade notebook is equipped with a 15" (38.1 cms) touch screen, a water-proof keyboard, and a shock-proof hard disk. It comes in a buoyant tough case for protection.

Any Personal Computer (PC) within the network can be used as a recording device (does not require recording software), even though a dedicated storage device is highly recommended.





Wall-mounted electrical and network outlets with Ground Fault



Survival

Systems

STST Training Aids Integrated Operator Panel and Remote



All Training Aids are controlled from one point, with remote access.



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STST Training Aids Simulated Controlled Storm



Wind, waves, and rain combined in controlled storm.

THE PERFECT STORM

"To Enhance and Preserve Workers' Lives"

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- Main Hardware Components
- Emergency Escape Exits
- Interior Configurations
- Cockpit Equipment
- Cabin Equipment
- Training Aids and Other Components
- Supporting Man-Lift Rated METS[™] LORS (Launch, Operation, and Recovery System) or Gantry & Hoist Handling System
- Safety Features
- Technical Training Teams
 - Commissioning and Maintenance Training
 - Aircraft Ditching Instructor Training



Survival

Systems

METS[™] Ready for Shipping



METS[™] & Equipment on a Flat Rack Container



METS[™] and Equipment Being Loaded on an Airplane



STST Design Recommendations





STST Design Recommendations





