

EILAT 2009

FIG Working Week

Surveyors Key Role in Accelerated Development

Dan Eilat Hotel, Eilat, Israel, 3-8 May, 2009



Hydrographic Education In Israel



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Background

Israel has a short coastline – about 100 NM in the Mediterranean and 6 NM in the Gulf of Eilat

3 Major Ports - Haifa, Ashdod and Eilat

No major natural hazards - only one natural bay

Various maritime projects - gas production platform and pipeline, fish farms, artificial islands...



Responsibilities

No National Hydrographic Office in Israel !

Shipping & Ports Authority (MoT) :

- * represent Israel in IMO & SOLAS
- * coordination with UKHO and others
- * responsible for **safety of navigation !**
- * promulgate **navigation warnings and notices to mariners**
- * maintain RCC – rescue coordination center
- * *no survey or charting capabilities !*



**Institute of Oceanographic & Limnological
Research (IOLR) - Ministry of Infrastructure**

- * national oceanographic institute
- * represents Israel in IOC
- * oceanographic and hydrographic survey capabilities
(including Simrad 1002 Multi Beam ES)
- * maintains national oceanographic data base



Survey of Israel (SoI) - Ministry of Housing

- * national mapping institute
- * responsible for cadastre and national GIS
- * responsible for licensing “land” surveyors
- * tasked in 1998 by Shipping & Ports Authority to produce an “up to date” **national nautical chart set**
- * cartography (including marine) & printing capabilities
- * no hydrographic survey capabilities



Israel Navy (Mod)

- * maintains a hydrographic branch – including :
mapping & charting, coastal processes, Metoc, (and weather forecasting center) and acoustics
- * responsible only for military hydrography and fleet support
- * have survey (Single Beam ES) and chart production capabilities



Education

Land Surveyors educated at the Haifa Technion, Faculty of Civil & Environmental Engineering

In 2000, after being tasked by S&PA to produce new nautical charts, the SoI approached the Technion to open a course in marine surveying

Technion approached the author, then head of the Israeli Navy Hydrographic Branch and a qualified hydrographer (MSc from Naval Postgraduate School USA) to develop such a course



Courses

First course – **Marine Surveying** – opened in 2001 with 10 students at the Technion

In 2005, upon retirement from the navy, the Technion, realizing the increasing demand and interest in marine surveying, asked for a postgraduate course.

First course in “**Advanced Marine Surveying**” offered in 2005. Initially proposed as a bi-annual course, it is now offered annually!



Syllabus

The “**Marine Surveying**” course includes basics in hydrography, the nautical chart, marine navigation, acoustics and the echosounder, SBES, MBES, LIDAR and Synthetic Aperture Radar, tides, IHO S44 standard and survey planning.

The course includes 2 lecture hours and 2 tutorial hours per week in a 14 week semester

A mandatory one day field survey aboard the IOLR Etziona (equipped with MBES) is included



The “**Advanced Marine Surveying**” course includes more in depth lectures on acoustics, oceanography, marine meteorology, electronic navigation systems, data processing & chart compilation and the Law of the Sea.

In addition, students prepare a seminar on one of various subjects of advanced survey techniques, international standards, tidal and current measurements and marine cadastre etc.

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Haifa University

In 2005 Haifa University opened a 2 weekly hours course “**Introduction to Marine Surveying**” in the department of Maritime Civilizations

Later that year a 48 hr course in “**Hydrography and Marine Surveying**” was opened for naval officer cadets during their academic stage at HU

This course is offered twice a year

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In 2008 the Haifa university opened the Leon Charney School for Marine Sciences. A (2 weekly hours) course in “**Marine Surveying**” is offered for postgraduate students in the marine – geosciences department at the school.

Later that year a new course for merchant marine cadets was opened at the University. This course is similar to the one for naval officers



Participation

From one course with 10 students at the Technion in 2001 we now have six different courses given annually in Israel. One, for naval officer cadets, is given twice a year.

In the spring - summer of 2008 **over 100 students** participated in 5 of these courses!



Motivation

While the numbers are very impressive, considering Israel's hydrographic needs and the status of hydrographic organization in the country, most of the students take the courses for reasons of interest only.

Only the courses for naval and merchant marine cadets are mandatory and are directed at practical education towards their future service



The Technion would be the obvious place for training marine surveyors, taking into account their entire educational program.

The Survey of Israel was approached by the lecturer and the Technion to consider defining a procedure for **licensing marine surveyors**, similar to the one established for land surveyors.

No such procedure has been approved to date!



Thank you

