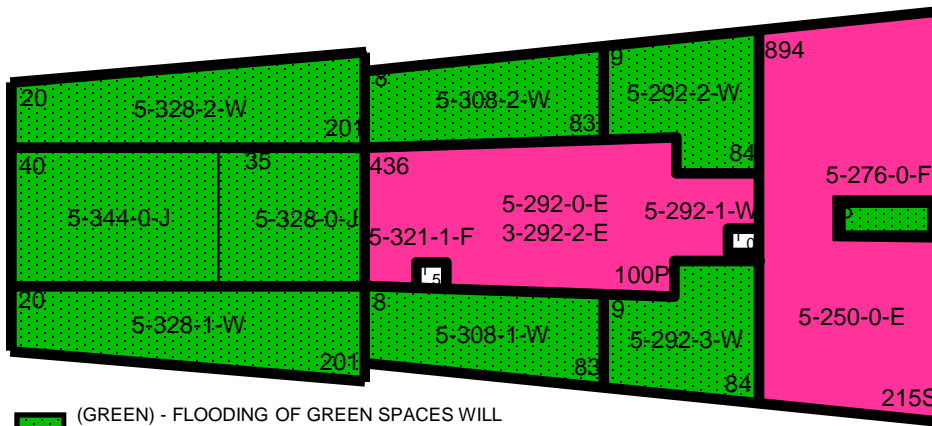






4.9 Flooding Casualty Control Software

Now time to
translate
everything we
have learned
to the 21st
Century!



-  (GREEN) - FLOODING OF GREEN SPACES WILL IMPROVE STABILITY, EVEN THOUGH FREE SURFACE EXISTS.
-  (YELLOW) - FLOODING OF YELLOW SPACES WILL IMPROVE STABILITY IF NO FREE SURFACE EXISTS. IF SPACE IS NOT 100% FULL STABILITY WILL BE IMPAIRED.
-  (PINK) - FLOODING OF PINK SPACES WILL DECREASE STABILITY BECAUSE OF ADDED HIGH WEIGHT, FREE SURFACE EFFECT OR BOTH.
-  (WHITE) - FLOODING OF WHITE SPACES HAS NO APPRECIABLE EFFECT ON STABILITY.

CAPACITY-TONS SW
COMPARTMENT NUMBER
INCLINING MOMENTS FT-T

SAILOR'S CREED

“ I am a United States Sailor.

I will support and defend the Constitution of the United States of America and I Will obey the orders of those appointed over me.

I represent the fighting spirit of the Navy and those who have gone before me to defend freedom and democracy around the world.

I proudly serve my country's Navy combat team with Honor, Courage, and Commitment

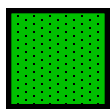
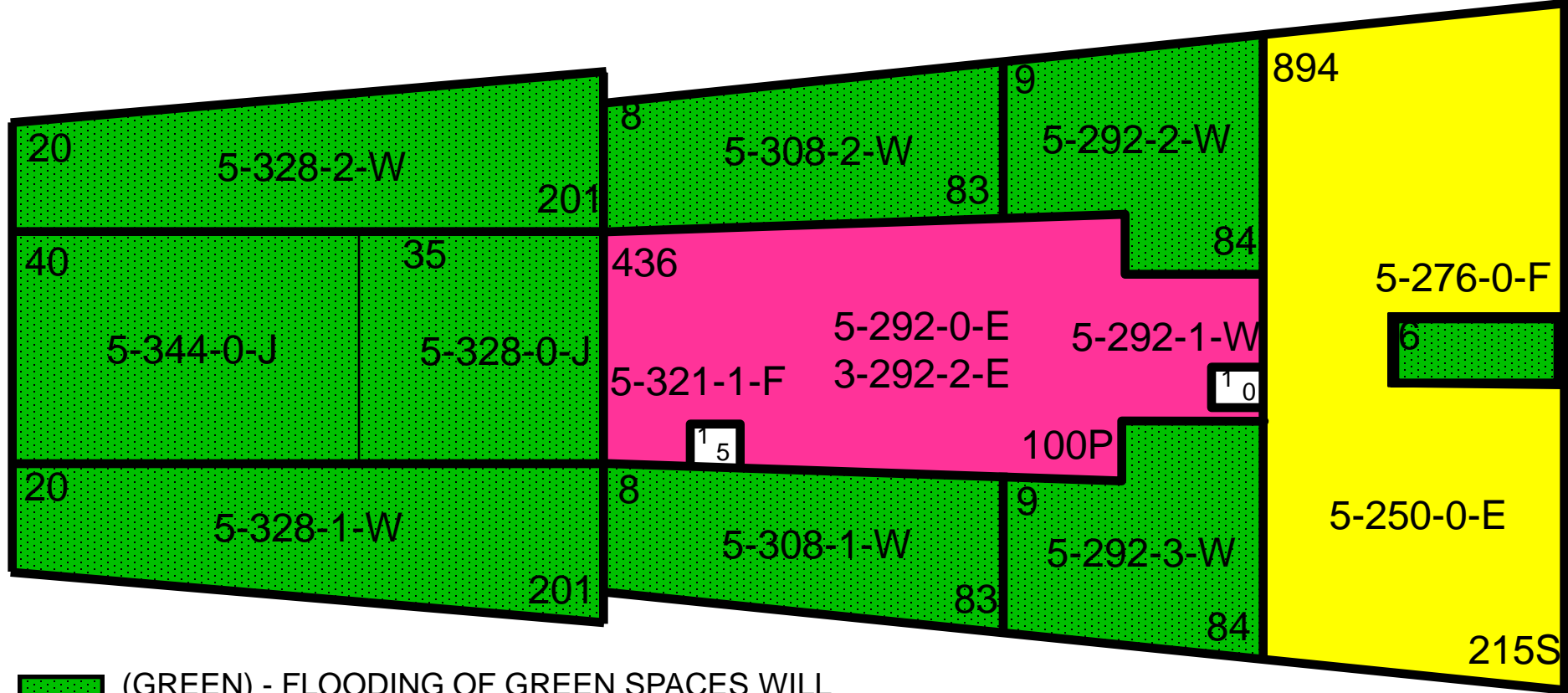
I am committed to excellence and fair treatment of all.”

References

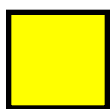
- a) FCCS User's Manual Version 3.4
(or greater)**

Enabling Objectives

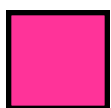
- DESCRIBE what FCCS is and why it's important.
- LIST functions/capabilities of FCCS.
- DESCRIBE Importance of Validating FCCS.
- PERFORM liquid load shifts and simulated damage to analyze ship stability.



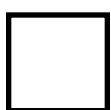
(GREEN) - FLOODING OF GREEN SPACES WILL IMPROVE STABILITY, EVEN THOUGH FREE SURFACE EXISTS.



(YELLOW) - FLOODING OF YELLOW SPACES WILL IMPROVE STABILITY IF NO FREE SURFACE EXISTS. IF SPACE IS NOT 100% FULL STABILITY WILL BE IMPAIRED.



(PINK) - FLOODING OF PINK SPACES WILL DECREASE STABILITY BECAUSE OF ADDED HIGH WEIGHT, FREE SURFACE EFFECT OR BOTH.



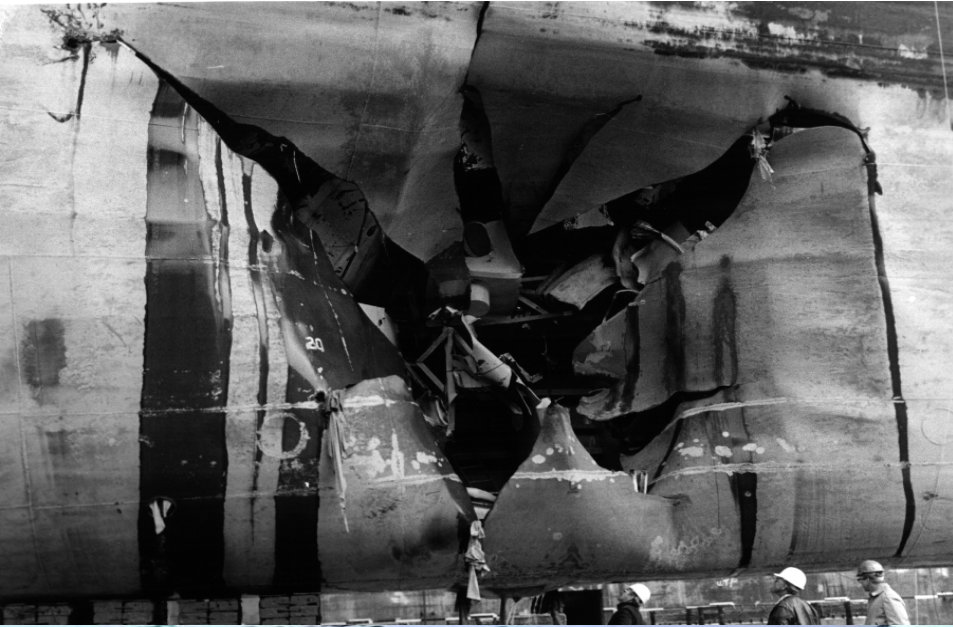
(WHITE) - FLOODING OF WHITE SPACES HAS NO APPRECIABLE EFFECT ON STABILITY.

CAPACITY-TONS SW
COMPARTMENT NUMBER
INCLINING MOMENTS FT-T

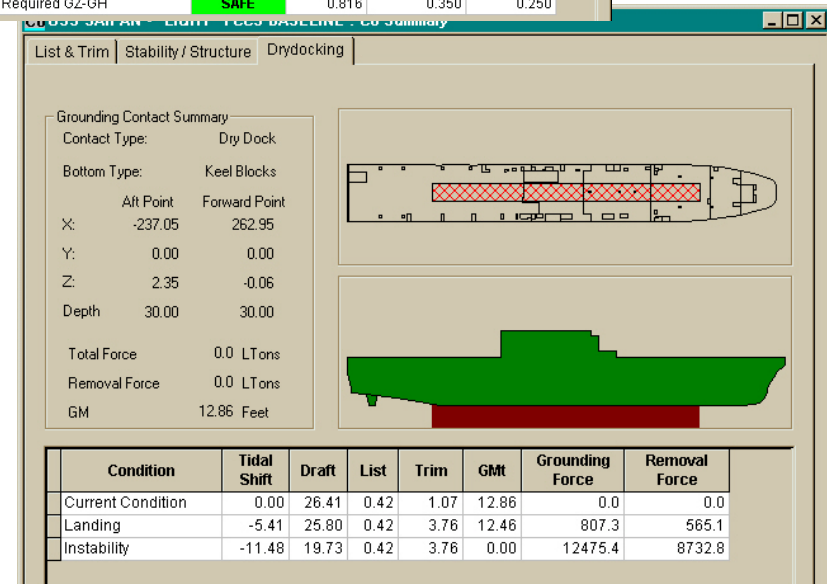
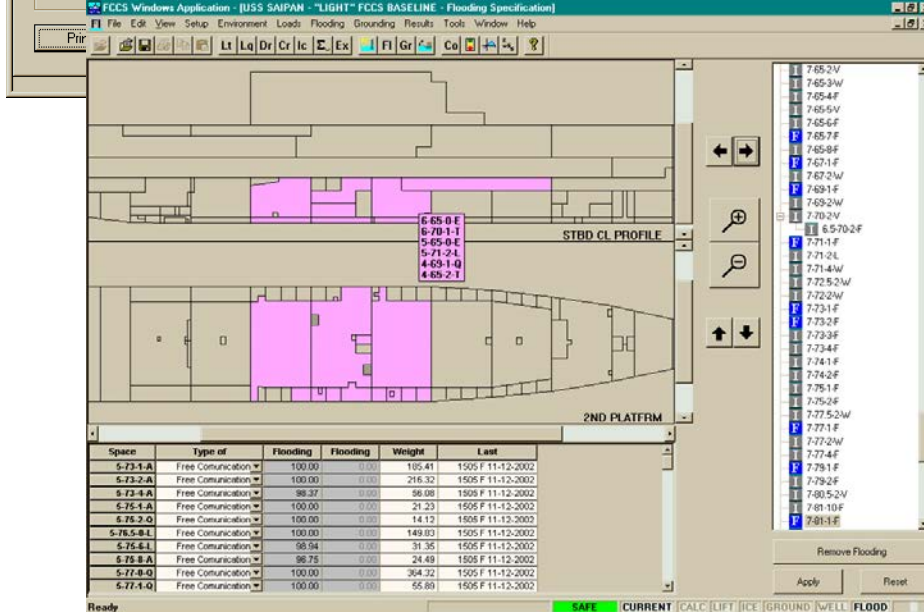
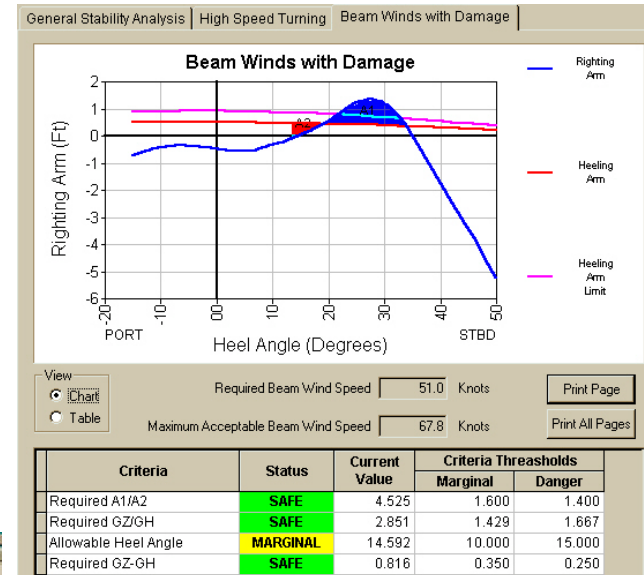
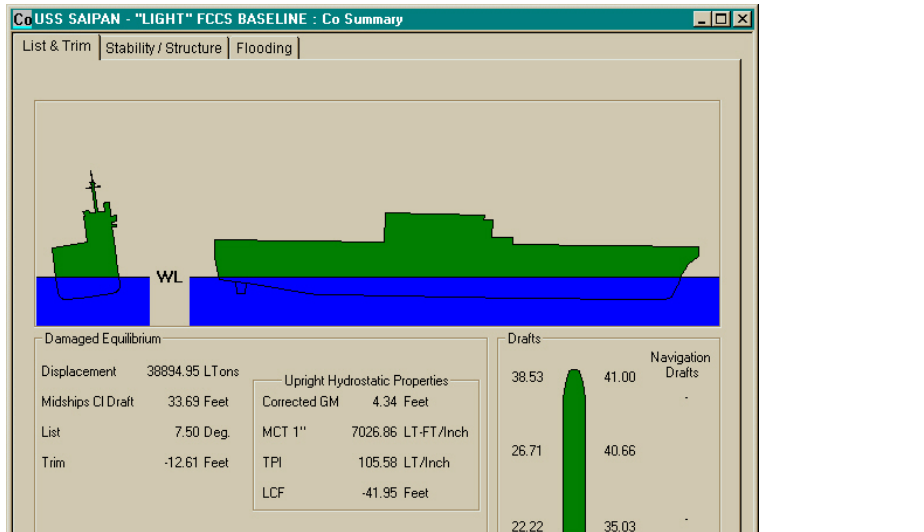
Need: Damage to USS COLE



Other Recent Examples



FCCS Block Screen Shots



What is FCCS?

- Flooding Casualty Control Software.
- A program used to quickly evaluate a ship's intact, damaged, and grounded stability.
- Creates loading graphs and gives recommendations of corrective actions.

What is FCCS?

- Is formatted with same information from inclining experiment.
- Corresponds to DC Book, and DC Plates.
- Takes into account *SHIP SPECIFIC* design criteria.... **MEANING FCCS is ship specific!**
- *Some FCCS Blanks... DDG Flight 2A... Big Decks...*



What can FCCS do?

- Load management functions.
- Calculates, displays, prints hydrostatic properties.
- Alerts user of potentially dangerous situations.
- Offers recommendations to improve current condition of loading.
- Display/track expended liquid reports (for each tank). ← *Shortcoming in program capabilities*

What can FCCS do? (cont).

- Track dry loads, liquid loads, ice loads, crane loads, wind and sea loads.
- Determine Flooded damaged reports.
- Evaluate stability and bottom reaction forces during vessel grounding. ← *Both intentional and unintentional.*

WEIGHT AND MOMENT COMPENSATION PROGRAM

- **Status I:** No displacement or Stability problems
- **Status II:** Deficient in both margins
- **Status III:** Deficient in KG margin
- **Status IV:** Deficient in displacement margin

What can FCCS do? (cont).

- **You can save various loading conditions.**
 - *Full Load*
 - *Min OP*
 - *Pre-dry-docking (zero list and zero trim)*
 - *“DCA’s sink the ship worst case scenario”*
 - *“500 migrants on the flight deck”*

LIMITATIONS

- Follow Liquid Loading Instructions
- No Abnormal Topping Weights
- Don't Submerge Limiting Draft Marks
- Maintain Watertight Integrity

Why validate FCCS?

- Garbage in = Garbage out.
- **YOU MUST UPDATE LIQUID LOAD DAILY!**
- *Step 1)* Ensure most recent version in use on your ship.
- *Step 2)* Dry load/Full Load verification
 - Fixed ballast
 - Stores
 - Ammunition and AIRCRAFT!
 - Abnormal load (ex: New small boat just installed)

Why validate FCCS? (cont)

- **Very laborious process.**
- *Once done, drafts from FCCS should very closely match what you are actually seeing...*
- **If NOT YOU HAVE A PROBLEM**

REVIEW OF CRITICAL STABILITY

1. Negative GM
2. Listing to danger angle
3. Floodable length exceeded
4. Damage w/ impending bad weather

FCCS vs. Established References

- DOES NOT take precedence over NTTP, NSTM, Section II(a) etc.
- In a ***DAMAGE SCENARIO***, your knowledge will get you back in the fight long before you break out and start using this program...

FCCS today...

- *Kept on a “Stand Alone” computer.*
“Capt... the DCA needs a new laptop!”
- Allowed to be installed on LAN computers for training purposes.

FCCS and the future...

- *DDX will have “real time” updating of Liquid Load soundings (TLI) and will constantly be evaluating stability.*
- But – That will not change
Limitations of DC Book, Design Criteria, Critical Stability etc.

POC'S

NAVY:

Naval Surface Warfare Center
Carderock Division – Code 244
Attn: J Rosborough
9500 MacArthur Blvd
West Bethesda, MD 20817-5700
Tel: 301-227-5392
E-mail:

RosboroughJM@nswccd.navy.mil

COAST GUARD:

Commanding Officer
USCG ELC
Code 023, Mail Stop 25
2401 Hawkins Point Rd
Baltimore, MD 21226-5000
Tel: 410-762-6708/6712
E-mail:

FCCS/elc@internet.uscg.mil

Summary...

- FCCS calculates/simulates all the various stability information and loading conditions.
- User MUST keep it updated and validated.
- Does not change established procedures and references.

Quiz...

- Open up FCCS on your computer.
- Open FFG tutorial.
- Proceed with tutorial and turn in before you leave class.
- ***DO NOT save any changes to the tutorial!***