

Shipbuilding Working group

PHOTOCOPY
PRESERVATION

get notes, handouts from John Goodman

WKgrp on Shipbuilding Industry - 7-8-93

Labar Issues

- Reps from OSHA -- Maritime Safety Program & Regs
- Advisory Committee

~ see handout

- OSHA covers all shipyards in U.S.
- Do not cover the crew of the vessels
- Concern: With new technology comes new hazards -- safety ~~safety~~ regs must follow along
- Shipyards rate highest in accident rates
- OSHA has not kept up regs w/ technology changes
- Don't want to over-regulate to the point that industry can't compete
- What costs do OSHA Regs impose on industry? - worry is not OSHA, ~~but~~ but of rates paid by compensation cases in trials! What costs does OSHA recommend in regs?

Construction Regs

- Howard Hyne - Coast Guard
- Handout

Howard Hyne - cost/wash

International Maritime Organization

SHIPYARD CONCERNS - USCG ACTIONS

ISSUE: Cost differential between US and foreign construction

ACTION: -Past studies have shown 3-15 % cost differential
-Industry agrees that differential is now 1-2% (part is due to legislatively mandated requirements)
-Constantly working thru IMO to level playing field (SOLAS 74, 81 & 83 Amendments are examples)
-Maritime Regulatory Reform (MRR) initiative to harmonize US/ABS/SOLAS standards

ISSUE: Why not adopt outright class and international standards?

ACTION: -International standards (SOLAS) not detailed to be stand alone..needs satisfaction to the administration
-Class requirements do not address all safety concerns (e.g., lifesaving equipment)..class societies not uniform quality
-MRR initiative to accept ABS and SOLAS wherever possible
-New IMO Flag State Implementation Subcommittee..ISM Code, criteria for recognized class society, defining flag state roles and responsibilities

ISSUE: Remove redundant regulations

ACTION: -1992 Comparison between USCG/ABS/SOLAS..a number of overlaps and voids were identified...MRR to specifically address
-Reviewed APL/Sea-Land 75 page listing of recommendations for deletions or revisions to regs...concurred with many of their recommendations...established joint USCG/industry task group to make final recommendations

ISSUE: Why not accept foreign standards and equipment?

ACTION: -USCG regs have always provided for equivalency..requested Shipbuilders Council of America (SCA) to publish list of all accepted equivalencies (USCG cannot do because info is proprietary received during vessel plan reviews)
-Current project with SCA to review number of foreign standards for acceptance...\$250K NSRP contract awarded to NASSCO this year with follow on project in NSRP budget for next year.
-MRR initiative specifically to address standards program
-USCG currently adopts over 250 industry consensus standards..participate in over 30 standards organizations including ASTM F-25 Shipbuilding Committee, ISO TC-8 Shipbuilding Standards, and IEC TC-18 Shipboard Electrical Standards...helping move domestic standards to international arena

Shipyard safety and health

A. Shipyard regulatory review. In 1982, the shipyard industry, represented by the Shipbuilders Council of America and the American Waterways Shipyard Conference, requested OSHA to identify the specific applicable provisions of the General Industry Standards (Part 1910) that apply to shipyards, and consolidate them with the shipyard employment standards (Part 1915) into one composite set of shipyard employment standards. OSHA agreed with their recommendation and embarked on this consolidation and modernization project. The existing shipyard standards were adopted in 1970.

OSHA published 6 proposed subparts on November 29, 1988 as a first phase of the consolidation project. These subparts addressed fall protection, scaffolds, welding, personal protective equipment, access and egress, and explosive and dangerous atmospheres.

The revision is coordinated with OSHA's revision of parallel provisions in the general industry standards so that consistent coverage of hazards which are encountered in these industry sectors can be provided.

Also in 1988, OSHA established a shipyard advisory committee - the Shipyard Employment Standards Advisory Committee (SESAC) - to assist the agency in reviewing and revising its standards. SESAC will have essentially completed its mission at its final meeting in July, and this committee will be discontinued in accordance with President Clinton's Executive Order 12838 (aimed at streamlining government). SESAC has made recommendations to OSHA on the following subparts: hazardous materials, fire protection, electrical, materials handling, and general working conditions.

The changes recommended range from merely technical ones to those that reflect modern industry practices. OSHA has utilized an approach that recognizes the ever-changing nature of workplace hazards. These rules set performance-oriented criteria that permit employers to adapt standards to the needs of each workplace. These standards represent a departure from the existing 30 year old specification-type standards.

Some examples of subparts that represent a significant conceptual approach include:

- o Electrical - consensus standards from the National Electrical Code along with appropriate OSHA General Industry standards were incorporated with current shipyard work practices
- o Fire Protection - combined OSHA standards along with relevant U.S. Coast Guard regulations and current shipyard practices

- o Hazardous Materials - purged nonrelevant standards requirements and incorporated state of the art criteria when working with hazardous or dangerous substances

While these represent significant and innovative methods of addressing shipyard hazards, all have utilized current work practices and existing technological advances. The regulatory approaches employed, however, should serve to foster and encourage employers to use innovative techniques to deal with occupational safety and health concerns.

When rulemaking on the above mentioned six subparts is completed, OSHA will develop additional proposals for shipyards for each subpart of existing OSHA shipyard standards. Some of the subjects currently covered in these other subparts are commercial diving, compressed gases and compressed air equipment, electrical work, fire protection, general provisions, general safety and health requirements, general working conditions, hand and portable tools, hazardous materials, machinery and machine guarding, materials handling and storage, occupational health and environmental controls, and toxic and hazardous substances.

B. Cost of compliance with current OSHA regulations. This information is being developed and should be available in about two weeks. OSHA expects that there will be a substantial savings in compliance cost to the shipbuilding and shiprepairing industry when the revision project is completed.

I. ACTION-FORCING EVENT

In the past ten years, large U.S. shipyards have built vessels almost solely for the Navy. With the drawdown in defense spending, these yards must either find new commercial markets or significantly reduce capacity.

The National Defense Authorization Act of 1993 required the President "to establish an interagency working group for the sole purpose of developing and implementing a comprehensive plan to enable and ensure that domestic shipyards can compete effectively in the international shipbuilding market." The President is required to submit this plan to Congress no later than October 1, 1993 (although an extension until April 15, 1994 is permitted if the President transmits to Congress an explanation of the reasons for delay.)

This memorandum describes the problems faced by the industry and lays out options for the elements to be included in the President's plan.

II. BACKGROUND

A. Industry Structure and Employment

The U.S. shipbuilding industry consists of two broad segments: (1) major shipbuilding facilities, and (2) second-tier facilities.

Major shipyards construct and repair ocean-going vessels with a minimum overall length of 400 feet. There are currently 17 major shipyards. (Exhibit 1 shows the location of these yards.)

Second-tier shipyards construct and repair smaller vessels, such as inland waterways and coastal carriers, tug boats, supply boats, ferries, fishing vessels, ^{Drill-rigs} barges, and small military and government-owned vessels. Most of this construction is protected by the Jones Act, which protects U.S. inland maritime traffic for U.S.-built ships sailing under the U.S. flag. These yards--approximately 100 in number--do not face the conversion problem confronting the major shipbuilding facilities and are thus not addressed in this memorandum.

In 1992, U.S. shipyards employed 123,900 workers--down from 171,600 in 1982. Approximately two-thirds or 83,000 of these workers were employed in the 17 major yards.

B. Post-War Production in Major Shipyards

Apart from the immediate post-war period when the United States enjoyed a virtual shipbuilding monopoly, the U.S. shipbuilding industry has not been competitive in the market for ocean-going vessels. Since 1960, ^{major} U.S. ^{shipyards} yards have produced no ocean-going vessel for foreign carriers.

In the 1960s and 1970s, U.S. yards were able to continue producing and repairing ocean-going vessels for the U.S. flag fleet, thanks to the existence of a number of direct and indirect subsidies. These included:

- *Construction Differential Subsidy (CDS)*. Beginning in 1936, the Federal Government underwrote the differential between the costs of building in U.S. versus foreign yards. As that differential rose, so too did the average CDS. By the end of the 1970s, the level of subsidy covered as much as 50 percent of the final purchase price.
- *The Jones Act*, which requires that domestic waterborne trade be carried on U.S.-built ships.
- *Operating Differential Subsidies to U.S.-Flag Vessels*, which were generally available only to U.S.-built ships.
- *Capital Construction Fund (CCF)*, which permitted owners of U.S.-flag ships to shelter income by placing it in a CCF. Funds could be withdrawn for the purchase of U.S.-built vessels.
- *Title XI*, which provided federal guarantees of private loans to U.S. carriers for the construction of U.S.-built ships.
- *Ship Repair Tariff*, under which the U.S. Customs Service levies a 50 percent tariff on the costs of repairs made to U.S. flag vessels in foreign shipyards.
- *Cargo Preference law*, which require foreign-built vessels to wait 3 years before they can carry civilian preference cargos.
- *Conference Pricing*

In 1981, the Reagan Administration eliminated CDS, thereby forcing U.S. carriers to pay the full cost of building in U.S. yards. Since U.S. prices are nearly double those offered by foreign yards, orders by U.S. carriers for ocean-going vessels dried up. The full economic and political impact of this decision was minimized, however, by the surge in government orders for naval vessels.

As U.S. Navy orders expanded, the major yards began to build almost exclusively for the U.S. Navy. New naval orders in the 1980s averaged xxx ships per year. (In the past five years, only seven commercial ocean-going vessels have been built in these yards.)

The drawdown in defense spending will lead to a substantial reduction in naval orders, leaving U.S. yards with excess capacity. The challenge for U.S. yards is thus similar to that faced by many other defense contractors: how to convert from the military to the commercial market.

Unless yards become competitive in serving the commercial market, the shipbuilding industry estimates that 70,000 (of the 123,000) jobs could be lost. Even if they do operate at full capacity, however, shipbuilders estimate that 20 percent of this loss (14,000 jobs) would occur anyway as some skills will no longer be required for civilian production.

C. Future Markets for the Major U.S. Shipyards

1. U.S. Military Construction

The U.S. military will continue to provide a market, albeit a much smaller one, for U.S. shipbuilders. The Navy still has 75 vessels on order or under construction. (28 of these will be delivered by 1994). Requirements for U.S. military shipbuilding are currently under review, but DOD projects that its upper-limit for new orders will be:

FY93	FY94	FY95	FY96	FY97	FY98	FY99
19	10	7	12	10	8	7

*yearly orders, on average,
will be ships per
year*

In the next century, replacement of aging vessels will require some increased construction. While the exact requirements remain uncertain, DOD estimates that its annual needs are not likely to exceed xxx ships per year. These levels of ship orders are likely to sustain 2 to 3 shipyards (at least one of which must be nuclear capable).

Given this projected military workload through 1997, the U.S. Shipbuilders Council estimates that U.S. shipbuilders must build approximately 50 commercial ships a year to support present capacity.

2. Foreign Military

The market for foreign military vessels will remain relatively small. Most countries with significant blue water fleets purchase naval vessels from their own yards, although limited demand may exist for certain classes of small vessels.

3. U.S. Domestic (Jones Act) Fleet

The Jones Act market will remain small through this decade. Demand for ocean-going Jones Act fleet is estimated to be at most 2 to 3 new ocean-going vessels a year. These numbers reflect a decline in demand for tankers (even taking into account new requirements that tankers have double hulls) due to a projected reduction in Alaskan oil shipments.

4. Non-Shipbuilding Markets

In slack periods, shipyards have engaged in non-shipbuilding projects, including the construction of railroad cars, under-river tunnel sections, wind tunnels, prison barges, offshore oil rigs, and marine equipment. MARAD believes that quasi-shipwork projects—including methanol plant barges and power plant barges (40 of which are now in operation) also present a potential source of business, but cannot estimate the value of such business.

5. International Ocean-Going Fleets (U.S. and Foreign)

italic or bold?

The international commercial fleet provides the only expanding shipbuilding market available to U.S. shipbuilders Many shipyards and analysts believe that worldwide orders for oceangoing vessels will increase substantially in the coming years to replace the aging existing fleet. In

*some type of
ships*

addition, trade growth will create demand for additional capacity. Drewry, a shipbuilding consulting firm has estimated that between 1992 and 2001 total demand (replacement + new demand) will be xxx ships--orders worth approximately \$xxx. Increased demand is also expected to drive up prices to a level where U.S. commercial production becomes profitable.

D. Competing in the International Market

U.S. shipyards face both external and internal challenges as they seek to compete in the international commercial market for ocean-going vessels.

1. Foreign Subsidies

Many foreign yards have benefited from (at times substantial) shipbuilding subsidies. Although the Japanese government has eliminated most of its direct subsidies, the European Community and South Korea still provide significant assistance. *The ITC estimates, however, that even with the elimination of foreign (and presumably existing U.S.) shipbuilding subsidies, U.S. shipbuilding prices would have to be decreased one third to be competitive internationally with major foreign yards.*

2. Entrenched Foreign Competitors

There are currently over 133 foreign yards capable of building ships over 400 feet. Japan and Korea together hold more than half of the existing market for such commercial ships.

To take share away from these experienced foreign yards, U.S. yards will have to overcome a number of entry barriers, including the importance of reputation and the existence of established customer relationships. *Since global shipbuilding capacity is estimated to exceed demand for new ship construction--even during peak years--such established relationships are likely to remain important.*

3. ~~Unit Labor Costs~~ Productivity issues

U.S. yards are not significantly disadvantaged by the cost of labor. The Shipbuilders Council of America estimates that U.S. wages (including fringes) are 50 percent lower than in Germany, on par with Japan, and 50 percent greater in Korea. Differences in productivity, however, have led to far higher unit labor costs. Most analysts estimate that foreign yards are twice as productive as U.S. yards. MARAD estimates, for example, that U.S. shipyards require 28 to 36 months from contract signing to delivery of the first ship of a class, almost twice the time required by the world's most efficient shipyards. This productivity gap results principally from:

- *The U.S. practice of building ships to order.* Foreign yards typically have built a series of ships from a standard design thereby benefiting from learning economies. (Analysts disagree over the extent of such economies, but most believe that costs continue to fall over the first five to six ships under construction.) Due, perhaps, to previous subsidies that removed the incentive to compete internationally, U.S. yards have not traditionally engaged in such series construction.

- *Differences in process flow management.* Although most U.S. yards are thought to have first-rate facilities, they are reported to lag their foreign competitors in terms of the organization and management of work load and thereby suffer greater bottlenecks in production.
- *Need for greater capital investment.* Analysts disagree whether or not U.S. firms lag their foreign competitors in terms of technology. The working group has not been able to assess whether or how much capital investment is required.

4. After Delivery Service

Shipowners now require worldwide service for their purchased ships. U.S. shipbuilders do not currently have established service networks and moreover have the reputation of providing poor after sales service compared to foreign yards.

5. Culture

Most discussions about the problems facing U.S. shipyards return inevitably to the issue of management culture. For the past ten years, managers of major U.S. yards have become accustomed to serving only one customer, the U.S. Navy. The consequences have permeated the activities of U.S. shipyards: they employ government-specified cost-accounting systems, focus on technological leadership rather than price, and lack experience in commercial competition.

III. OPTIONS

The path from military to civilian production will not be easy. To be successful, U.S. shipyards will have to make extensive changes in their operations and, equally important, in their approach to doing business. Responsibility for these changes lies with the owners, the managers, and the workers of U.S. yards.

Option 1 provides a multi-faceted approach that creates a level playing field for international competition and strengthens the market-driven adjustment of U.S. yards to the commercial market. All working group members agree that these policies should be at the core of the Administration's report. Some members believe that the government should provide greater subsidies to the industry. Options 2, 3, and 4 therefore include all the policies listed in option 1 and offer additional funds for R&D, ship purchases, and shipyard modernization.

OPTION 1: Strengthening Market-Driven Conversion

Rationale. This option is intended to provide firms the opportunity to compete internationally. The six elements--market access, deregulation, competitive R&D assistance, marketing assistance, and export financing--are consistent with our assistance to other industries seeking to convert from defense to civilian markets.

Description. This option has six elements:

1. Level the International Playing Field

US negotiators are aggressively negotiating an end to foreign subsidies. These negotiations received a boost in July, when all principal parties agreed to negotiate on the basis of a proposal by the OECD chairman that called for an end to subsidy programs by January 1, 1995. The chairman has proposed that they be concluded by November 1993. Participants have agreed not to introduce any new programs after September 30, 1993. USTR believes there is a reasonable chance that these negotiations will be successful.

a realistic/firm
date?
Probably not

2. Work with Congress on Acceptable Legislative Remedies to Foreign Subsidies

Although the Administration hopes that an agreement will be concluded this year rendering bills such as HR 1402 (the Gibbons bill) unnecessary, USTR will be working with Congress to develop legislation that will provide remedies for the trade policy problems faced by the shipbuilding industry in a way that would support the long-term objective of eliminating subsidies.

3. Ensure that U.S. Yards are not Impeded by Unnecessary Regulatory Barriers

Coast Guard regulations. The U.S. Coast Guard sets construction standards for U.S. flagged vessels. Existing differences between U.S. and international standards make it more difficult for U.S. yards to produce off-the-shelf designs for both the domestic and foreign markets, thereby reducing both scale and cumulative learning. The Secretary of Transportation will direct the Coast Guard to continue working with the International Maritime Organization to create a more level playing field and with U.S. carriers and standards bodies to delete or revise regulations that add costs.

OSHA regulations. OSHA is currently working with the shipbuilding industry to review and revise its standards, thereby reducing the overall cost of compliance.

Anti-trust regulations. Federal law enables shipyards to engage in a wide range of vertical and horizontal cooperative ventures. Existing antitrust law enables firms to form legitimate joint ventures involving some integration or risk sharing. The National Cooperative Research and Production Act provides anti-trust protection for firms engaging in joint R&D and production ventures. The Export Trading Company Act provides an antitrust exemption for export trade and related activities.

4. Offer R&D Assistance through Technology Reinvestment Program (TRP)

The TRP is a collaborative inter-agency effort to support technology development, technology deployment, and education and training under the Defense Conversion, Reinvestment, and Transition Assistance Act. Shipbuilding infrastructure is one of the eleven technology focus areas that have been identified as a TRP priority. All proposals require 50 percent cost sharing. ARPA expects to award contracts in September. Of the \$471.6 million appropriated for FY93,

\$15 million was earmarked in report language for commercial shipbuilding; the industry will otherwise have to compete for funds against proposals for other industries.

5. Assist Shipyard International Marketing Efforts

The Secretary of Commerce will direct the U.S. Foreign Commercial Service to assist U.S. shipyards in their efforts to develop and sustain relationships with key customers around the world. The USFCS provides assistance in the form of market information, marketing support, and trade missions.

6. Promote the Financing of Foreign Sales with EximBank Financing

Once customers contract for U.S.-built ships, the Eximbank will make funding available to finance the export of these vessels. In accordance with the OECD Code on Export Credits, Eximbank financing provides loans for up to xxx years at xxx interest rate.

Pros:

- Provides yards with opportunity to compete on level playing field
- Provides R&D assistance consistent with that provided to other defense industries seeking to convert to civilian production
- Reduces government-imposed impediments to competition
- Help yards overcome problems in marketing and export financing
- Elements are consistent with U.S. goals in international shipbuilding negotiations

Cons:

- Less than desired by industry and its supporters
- Not certain that these measures will restore competitiveness of industry

Budget cost: This option would be deficit neutral.

OPTION 2: Option 1 + Additional R&D Subsidies through Dedicated ARPA Program

Rationale. The elements in option 1 may still leave U.S. yards without the market knowledge or ability to compete in the commercial market.

Description. This option provides additional subsidies for:

1. The development and marketing of new designs and construction processes

Shipyards would compete among themselves for access to funds with these initiatives. They would be encouraged to initiate partnerships with customers, suppliers, and technologists to

develop an integrated approach. Funds would be awarded to the teams that identified a real market need; a new design concept; or a new competitive approach to the construction process.

2. The creation of National and Regional Maritime Technology Centers

The goal of these centers would be to provide for continuous product and process improvement in areas such as advanced materials, computer integrated enterprise, agile manufacturing, etc.

Budget Cost. Proponents have proposed funding the program at anywhere between \$460 million and \$775 over the next five years. However, proponents have provided no evidence that the benefits of the larger program justify the higher costs.

Pros:

- Provides support and guidance that may help yards develop tools to compete in international commercial market.

Cons:

- ARPA does not yet consider program ready for funding
- All members of the working group except xxx, yyy, and zzz believe that shipyard culture and management problems lie at the heart of the conversion problem. Providing designs without accompanying changes in these areas will have little effect.
- DOD does not yet support as important use of its declining resources
- Program would be inconsistent with an international agreement eliminating shipbuilding subsidies
- Adoption of program would render negotiations to eliminate subsidies more difficult

OPTION 3: Option 1 + Title XI Loan Guarantees

Rationale. The elements in option 1 may still leave U.S. yards without the market knowledge or ability to compete in the commercial market. Sales to the yards can be provided indirectly by providing loan guarantees to ship buyers for the purchase of U.S.-built ships.

Description. Fund Title XI loan guarantee program at \$75 million in each of FY94 and FY95, and \$50 million in FY96 for the acquisition of new vessels by U.S.-flag carriers.

Pros:

- Helps U.S. carriers attract capital to finance acquisition of new ships. May therefore lead to additional orders for U.S. yards.

Cons:

- Since guarantees are provided only to U.S. carriers, does not directly contribute to ability of yards to compete in international market.
- Not all guarantees would benefit major yards. Title XI also provides guarantees for Jones Act carriers.
- Domestic-build requirements would be inconsistent with an international agreement eliminating shipbuilding.
- Adoption of program would render negotiations to eliminate subsidies more difficult

[Legislation proposed on Hill also recommends (a) that Title XI loan guarantees be made available to foreign carriers and (b) that Title XI loan guarantees be made available for shipyard modernization. All members of the working group oppose these uses of Title XI funds. (a) would violate the OECD Code on Export Credits, and (b) creates numerous administrative problems since commercial effect of modernization could not easily be evaluated.]

OPTION 4: Option 2 and 3 + Series Construction Assistance

Rationale. This option provides maximum assistance to shipyards. In addition to Title XI loan guarantees and R&D support, it also provides subsidies for the construction of a series of ships.

Description. This option would permit the Secretary of Defense, subject to the availability of appropriations, to pay assistance to a U.S. shipyard for the construction of any vessel that is one of a series. Payments will cover 100 percent of the difference between the cost of construction in a U.S. yard and foreign yard. Since costs decline with construction, payments would be expected to decline in a series as well.

Pros:

- By removing cost difference between U.S. and foreign yards, this measure would ensure orders for U.S. yards

Cons:

- Insulates shipyards from competitive pressures of world market and reduces incentive for yards to achieve market-rate efficiency
- Domestic-build requirements would be inconsistent with an international agreement eliminating shipbuilding.
- Adoption of program would render negotiations to eliminate subsidies more difficult
- More than expected by shipyards

V. DECISION

Working Group Recommendation. All members of the working group believe that Option 1 should be part of the Administration report. Members disagree about the merits of options 2 and/or 3. All members oppose option 4.

___ Adopt Option 1

___ Adopt Option 2

___ Adopt Option 3

___ Adopt Options 2 and 3

___ Adopt Option 4

**PHOTOCOPY
PRESERVATION**

Shipbuilding Mtg 7-22-83