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NRL Memorandum Report 1654

366594

Ship Profiles With Plan View

[Unclassified Title]

W. L. ROBERTS

*High Resolution Branch
Radar Division*

September, 1965

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ABSTRACT

Profiles and plan view, with dimensions, are shown for ocean-going ships, 500-feet, or longer. These may be helpful in predicting ship radar signatures.

PROBLEM STATUS

This is an interim report; work on this problem is continuing.

AUTHORIZATION

NRL Problem 53K03-06A
Project RT-8801-008/6521/W3512X

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SHIP PROFILES WITH PLAN VIEW

INTRODUCTION

The radar signature of a ship in a seaway is a complex function of the radar frequency, pulse length, antenna, and target aspect. The aspect of the target is related to the motion of the ship in a seaway. The ship profiles in this report constitute the first of a series of reports which may be useful in predicting the approximate radar signature of a ship.

PROFILES

A full-range of graphic profiles may be found in the Naval publications:

"Merchant Ships of the World Graphic Profiles," Office of Naval Intelligence No. ONI 35-9 (Confidential).

"Missions and Characteristics of U.S. Navy Ships and Aircrafts," Office of Chief of Naval Operations No. NWIP 11-(20)A (Confidential).

The graphic profiles found in these publications are intended for visual identification of ships. The absence of a plan view, or any dimensions, particularly of the superstructure, make them of little value in attempting to predict a radar signature.

The profiles shown in this report are of ocean-going ships, 500-feet, or longer. Included are profiles of Naval and commercial ships. Along with each profile is a plan view of the top deck. Every effort has been made to present accurate dimensions of the hull, and of the more prominent features of the superstructure.

These profiles and plan views have been traced from drawings supplied by the Maritime Administration, the U.S. Coast Guard, and the Hull Division of the Bureau of Ships. The tracings were then reduced photographically to report size.

Profiles of Naval ships are limited to aircraft carriers, guided missile frigates and destroyers. Battleships and cruisers have been placed in the reserve fleet. A program is under way in which some cruisers are being converted to guided missile frigates, or in a few instances, to command ships.

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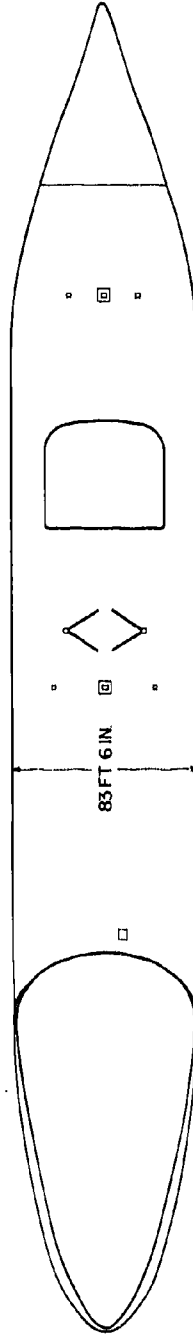
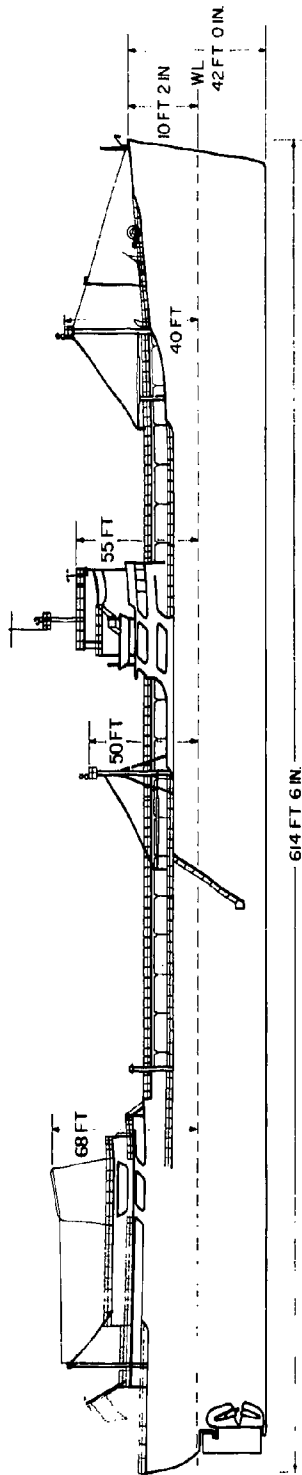
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Profiles of commercial ships have been placed in three groups: passenger, cargo, and tanker. Those shown are felt to be representative of ocean-going ships in these groups. Tankers are among the largest ships in service and larger ones are in the design or construction stage. Profiles of three different size tankers are shown. This was done to emphasize the similarity of their profiles and plan view, other than their length and breadth.

A second report containing profiles of small ocean-going ships is in preparation.

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TYPICAL OCEANGOING TANKER
25,000 TONS DISPLACEMENT

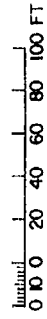
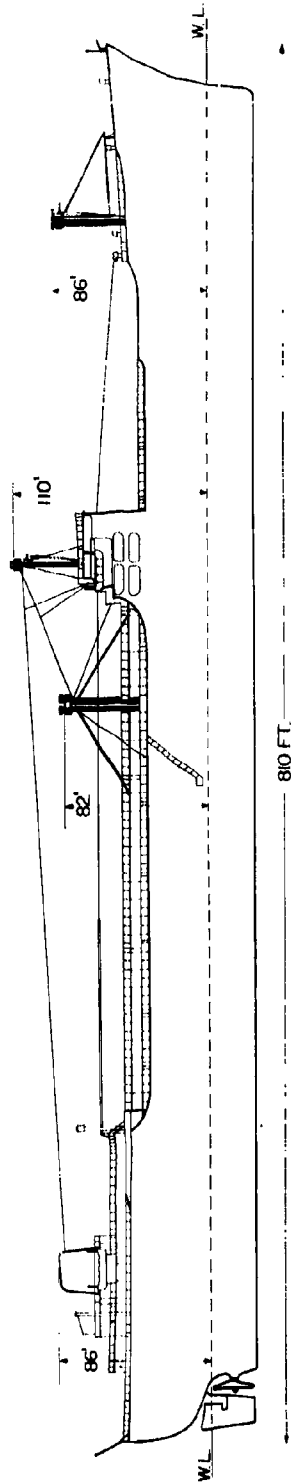


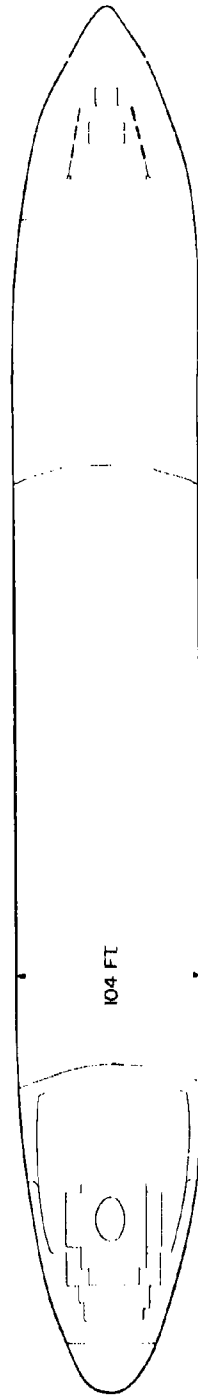
Figure 1

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TYPICAL OCEANGOING TANKER
60,000 TONS DISPLACEMENT

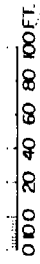
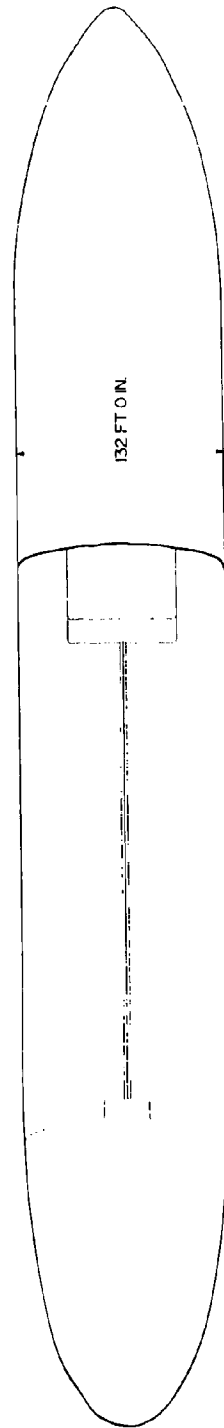
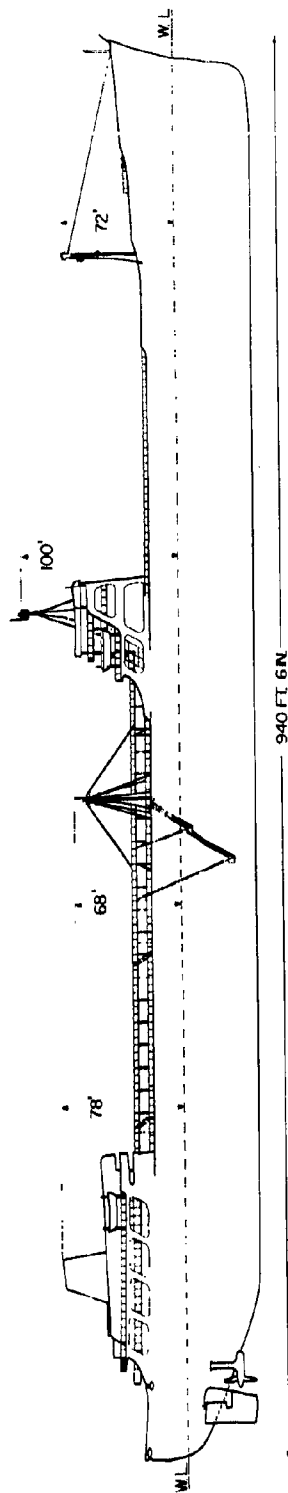


Figure 2

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TYPICAL OCEANGOING TANKER
136,000 TONS DISPLACEMENT

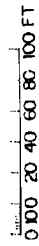
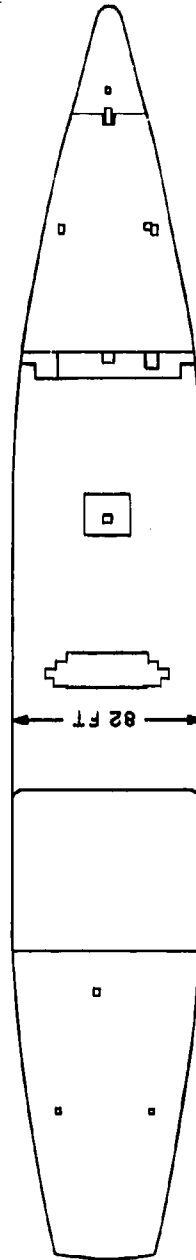
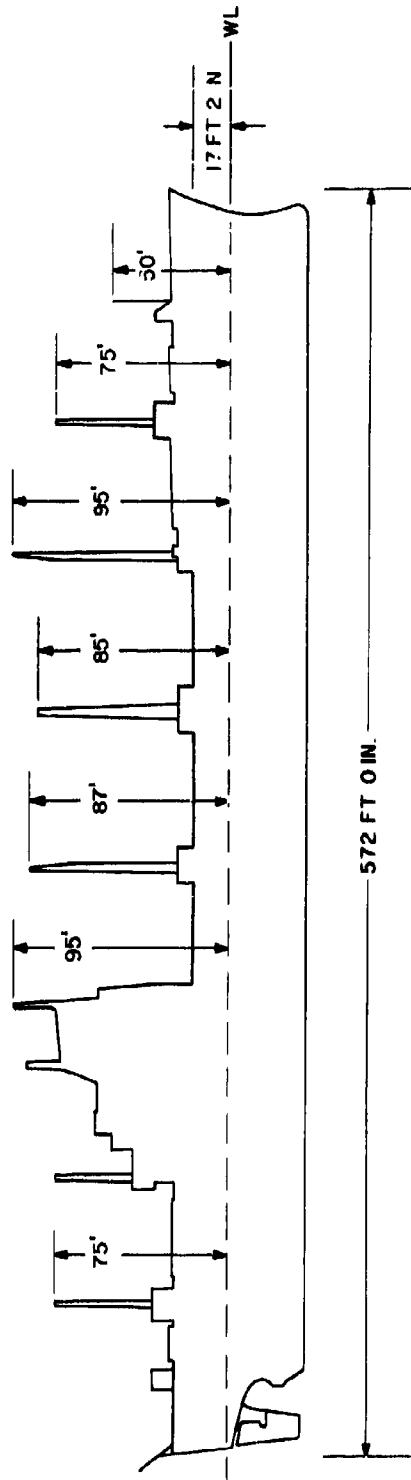


Figure 3

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TYPICAL OCEANGOING FREIGHTER
20,000 TONS DISPLACEMENT
(MASTS ARE STOWED ON DECK WHEN IN TRANSIT)

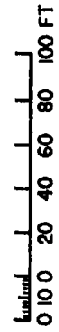
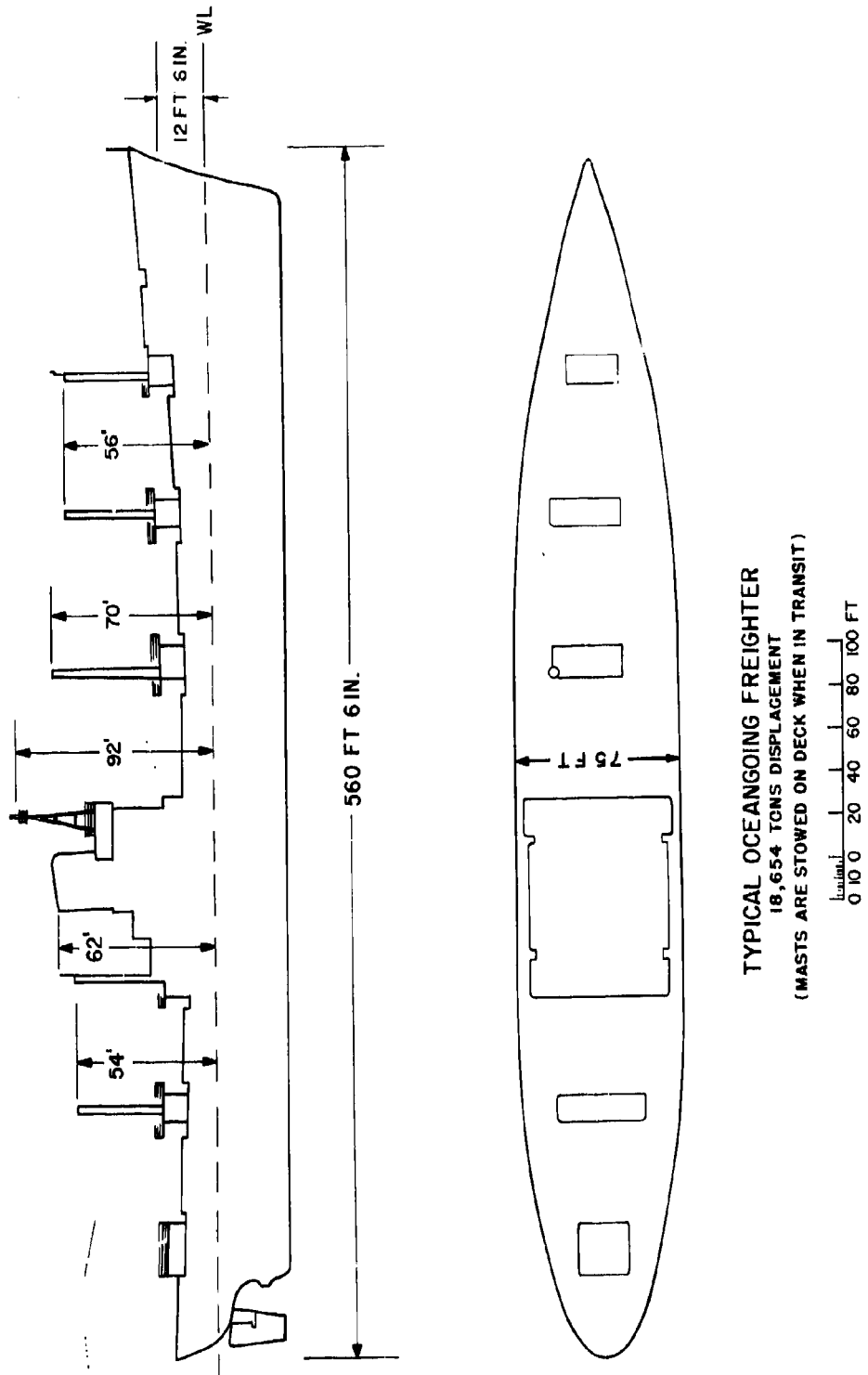


Figure 4

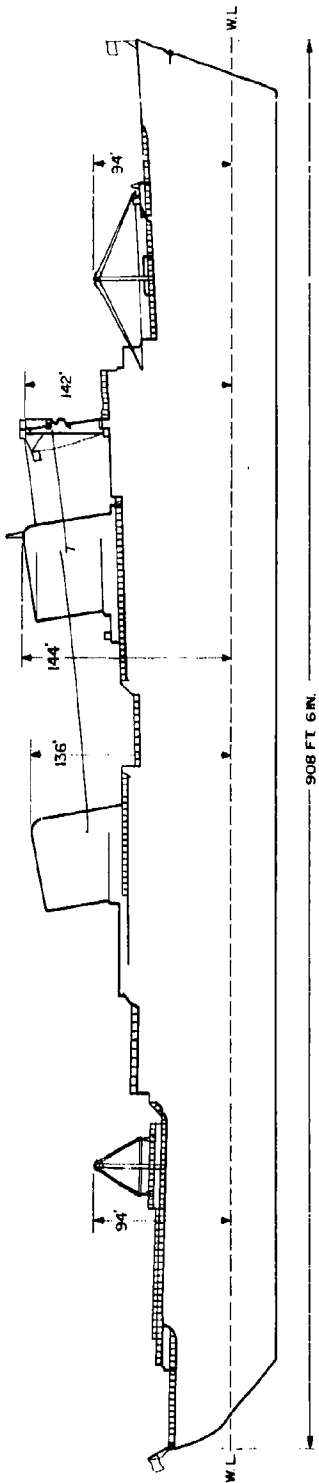
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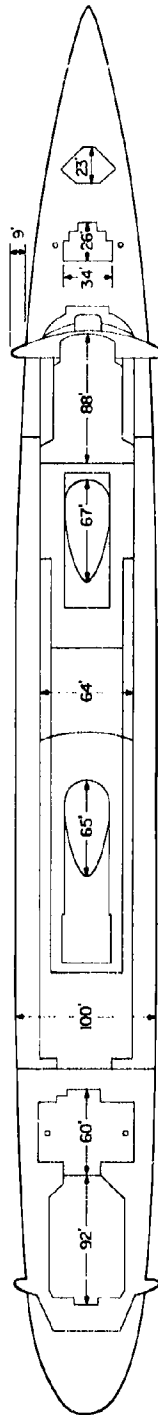


TYPICAL OCEANGOING FREIGHTER
18,654 TONS DISPLACEMENT
(MASTS ARE STOWED ON DECK WHEN IN TRANSIT)

Figure 5



8



TYPICAL PASSENGER LINER
45,400 TONS DISPLACEMENT

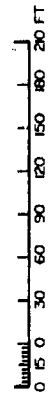
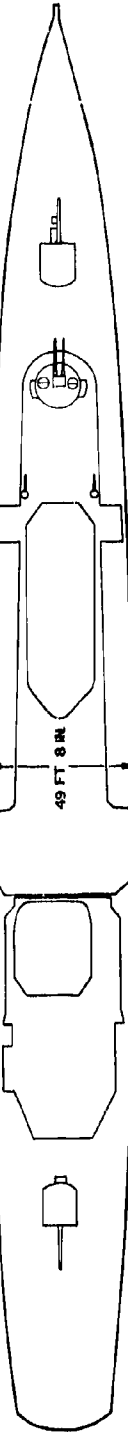
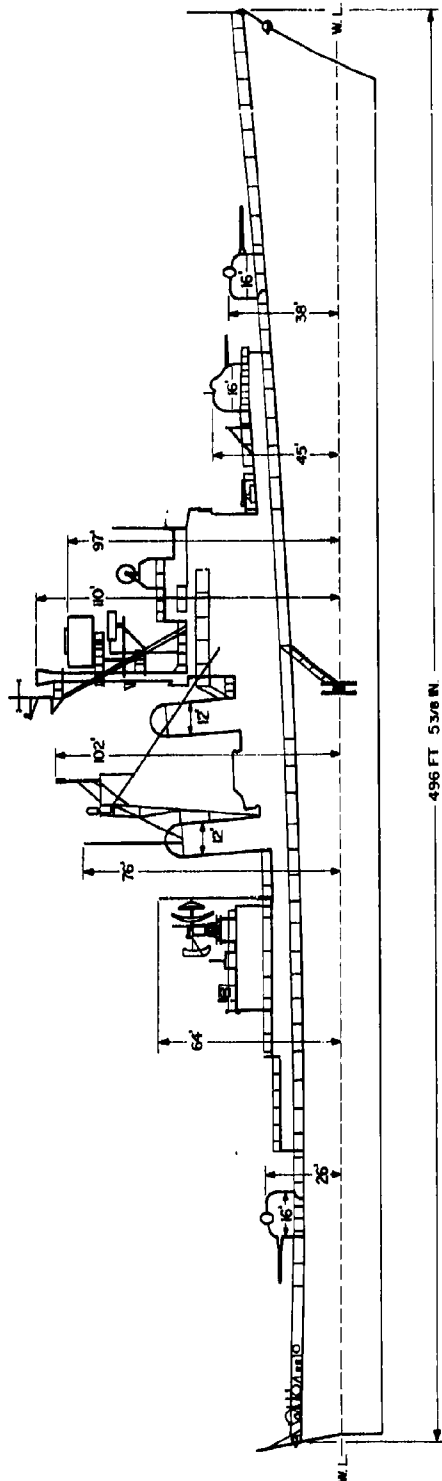
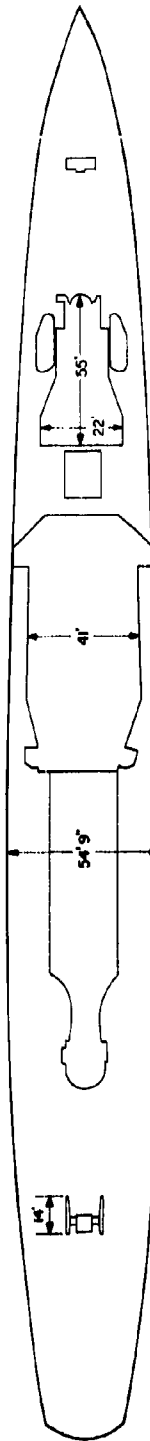
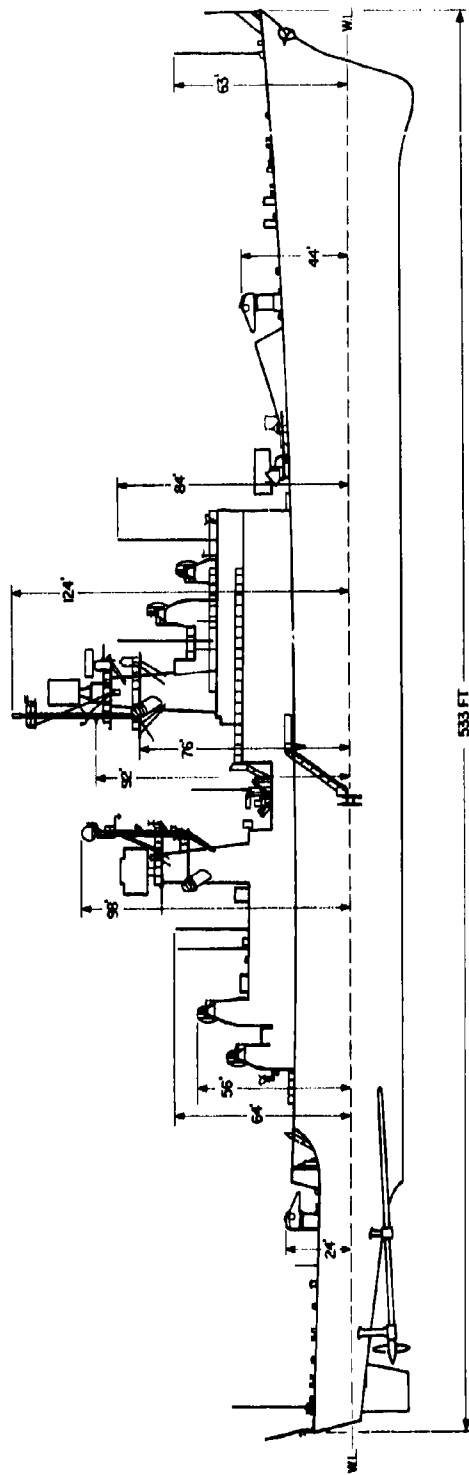


Figure 6



TYPICAL DESTROYER DL-5
0 10 20 40 60 80 100 FT

Figure 7



TYPICAL DLG 16
GUIDED MISSILE FRIGATE

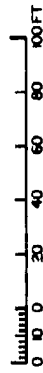
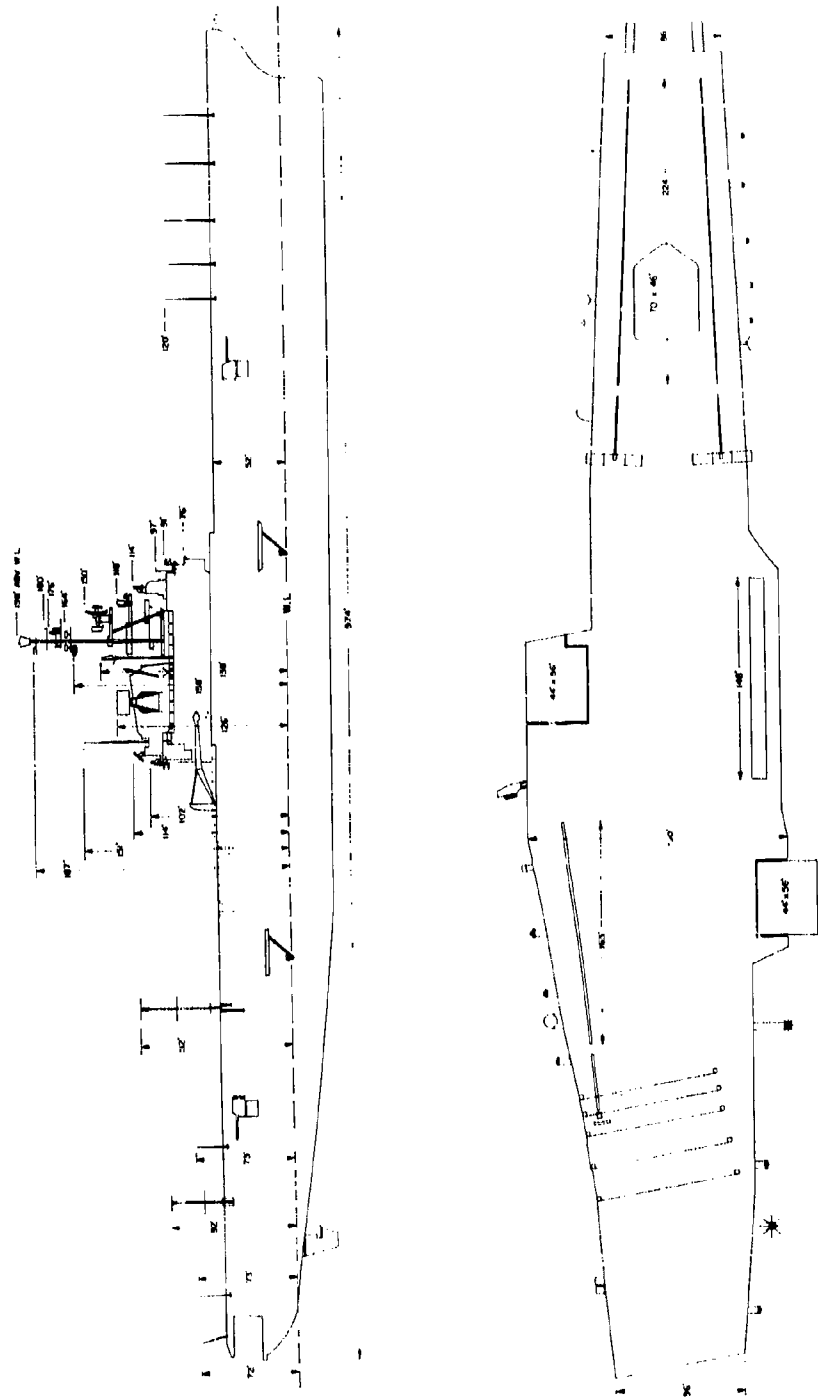


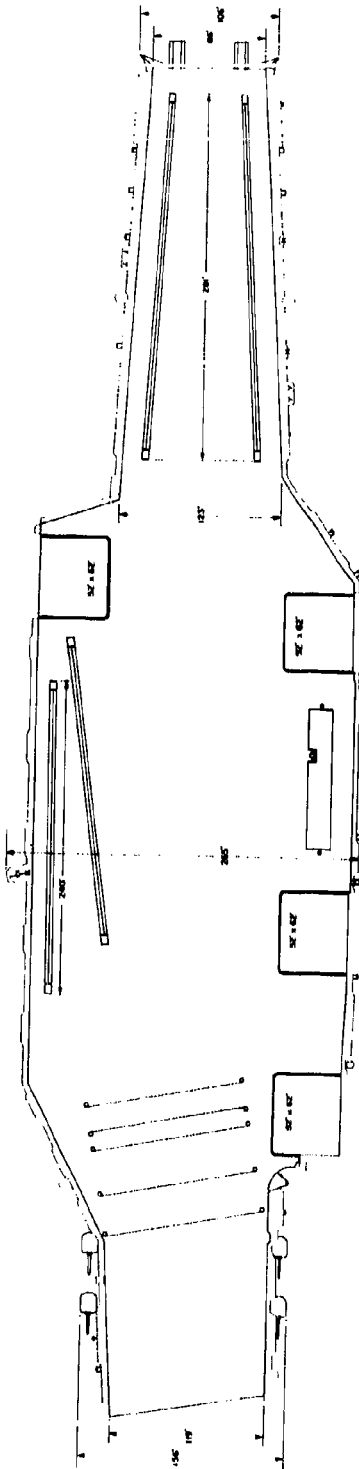
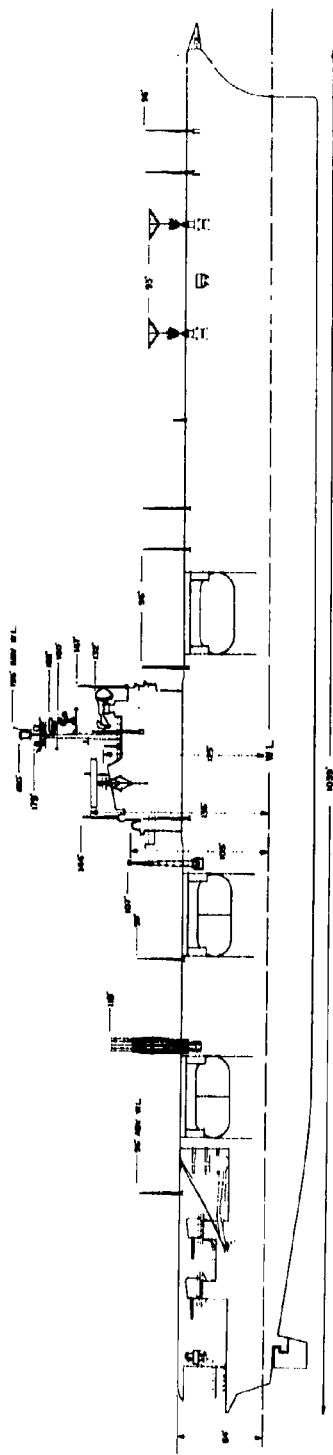
Figure 8



AIRCRAFT CARRIER CVA CLASS - 41

0 25 50 100 150 200 FT

Figure 9



AIRCRAFT CARRIER CVA CLASS-59

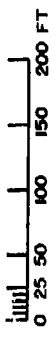


Figure 10

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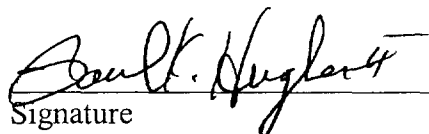
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TI (6) SHIP PROFILES WITH PLAN VIEW.
DN (9) Interim rept.
AU (10) Roberts,W. L.
RD (11) Sep 1965
PG (12) 13 Pages
RS (14) NRL-MR-1654
PJ (16) RT8801 008 6521W3512X
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