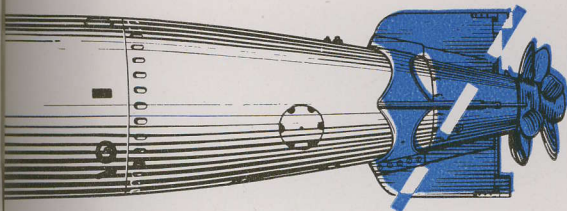


CHAPTER 5

THE TAIL

RECOMMENDED TOOLS
AND MATERIALS



Inner Construction	97	Parts and Tools	99
Exterior Details	98	Notes	102

T H E T A I L

The Tail Assembly is Comparatively Simple

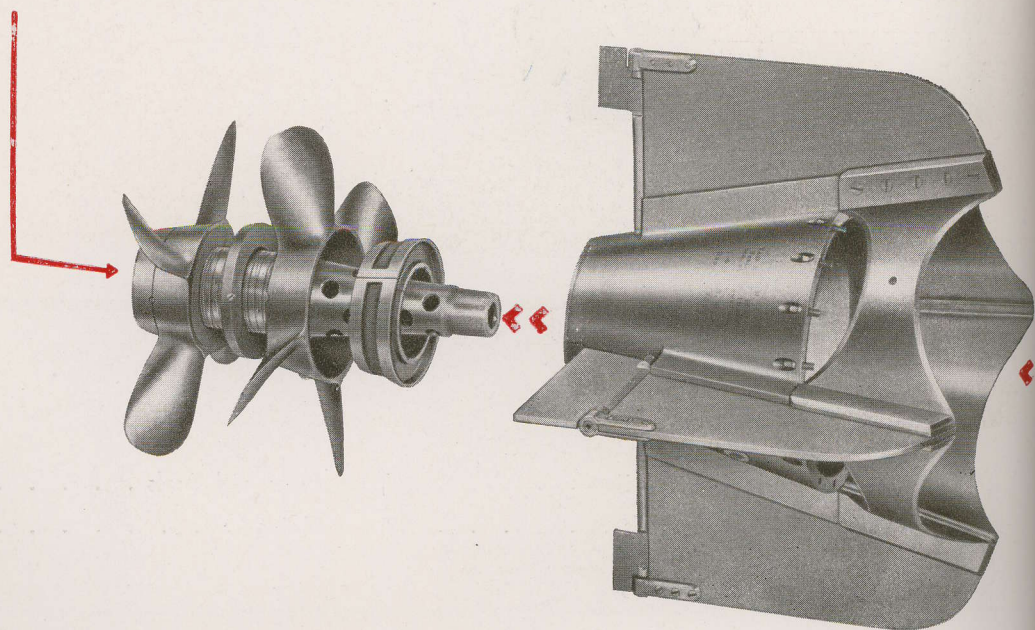
IF YOU REMEMBER ONE DETAIL

There are relatively few parts in the tail assembly, and fitting them into their proper places should present no great problem to anyone with any mechanical turn of mind at all . . . provided it is always remembered that the forward propeller sleeve fits into place from the *forward* end of the tail cone, all other units in the assembly fitting into or against the *after* end.

The major difference between the Mark 13 torpedo and its Modifications (1 and 2) is in the tail design. In the Mark 13 the depth and steering rudders are mounted on the afterside of the propellers. In Mods. 1 and 2, they are mounted

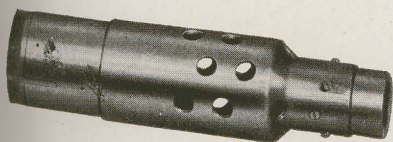
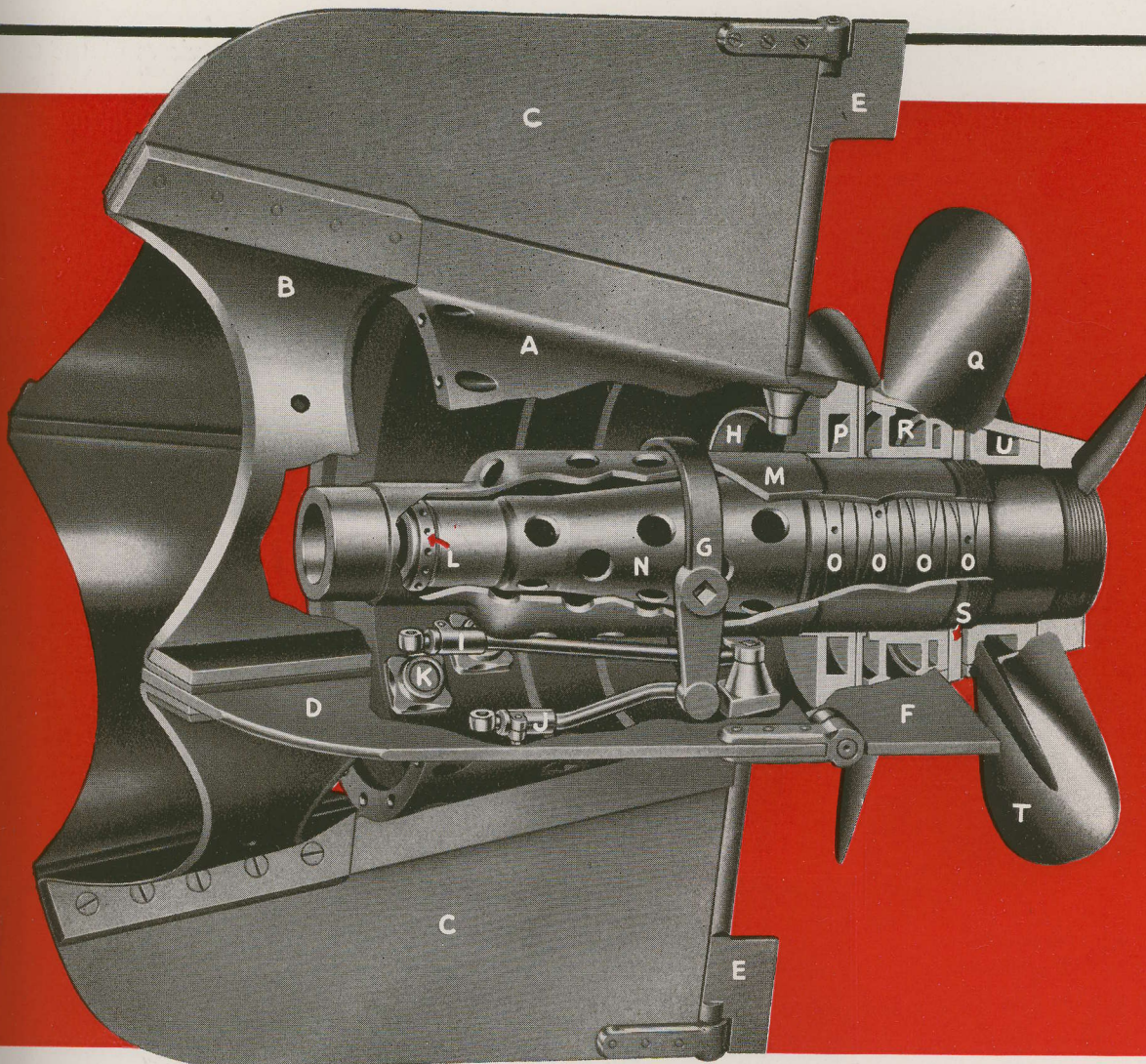
forward of the propellers, which takes the tail rails, rudder linkage, rudders and rudder supports out of the propeller stream, thus eliminating their interference and so increasing both the speed and the range of the torpedo.

In the illustration it will be seen that the tail cone forging serves as a support for the rudders, propeller sleeves and propellers. The tail cone also houses over the exhaust valves which are carried on the after bulkhead of the afterbody, preventing the escape of exhaust gases into the sea by any means other than through the escape holes provided in the propeller sleeves; leading the exhaust into the turbulent wake of the propellers in this manner "cuts it up" and reduces surface indications of the torpedo's passage through the water.



DIMENSIONS AND OTHER DATA

Length, After End to Joint Line	16.8 inches
Weight (Included with Afterbody; See Page 93)	
Diameter Forward Propeller	16.0 inches
Pitch Forward Propeller	LH 30.0 inches
Diameter After Propeller	14.3 inches
Pitch After Propeller	RH 29.5 inches
Propeller RPM	1150



A Tail Cone
B Blade Support
C Vertical Rudder Blade
D Horizontal Rudder Blade
E Vertical Rudder
F Horizontal Rudder

G Horizontal Rudder Yoke
H Vertical Rudder Yoke
I Horizontal Rudder Rod and Eye
J Vertical Rudder Rod and Eye
K Drain and Access Plug
L Grease Ring

M Forward Propeller Sleeve
N After Propeller Sleeve
O Sleeve Bushing (4)
P Tail Bearing
Q Forward Propeller

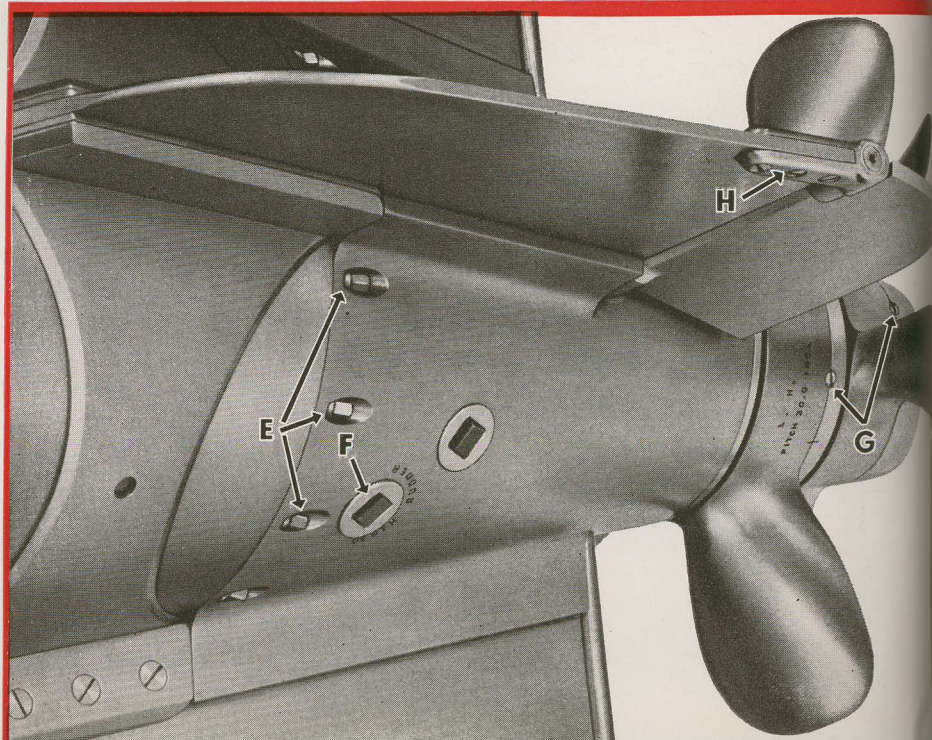
R Forward Propeller Hub
S Forward Propeller Nut
T After Propeller
U After Propeller Hub
V After Propeller Nut

EXTERIOR DETAILS OF TAIL ASSEMBLY

These close-up views of the tail assembly disclose (left) how vertical rudder spindles are carried in outboard bearings A-A, which are screwed to the vertical fins; location of grease plugs in tail bearing (B) and forward propeller (C); graduations (D) on port side of tail cone by which depth rudder readings are made. (Starboard side carries zero graduation only, for aligning top surfaces of horizontal rudder.)



(Right) Underside of tail assembly, showing: joint screws (E) which fasten tail to afterbody; plug (F) which closes depth rudder access hole (similar hole on starboard side gives access to vertical rudder connection); lock screws (G) which prevent accidental backing-off of propeller nuts; mounting of outboard bearings (H) for horizontal rudders.



PARTS FOR TAIL

KEY: SG—STOCK GROUP • SP—STOCK PART

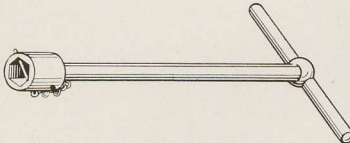

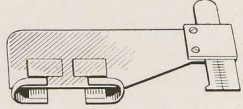
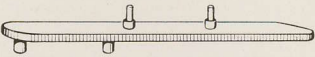
NUMBER OF PIECES		NUMBER OF PIECES	
FORWARD PROPELLER SP 14810	1	FORWARD PROPELLER NUT SP 11868	1
FORWARD PROPELLER SLEEVE SP 11765	1	AFTER PROPELLER NUT SP 14574	1
AFTER PROPELLER SP 14811	1	SLEEVE BUSHING SP 9164	4
AFTER PROPELLER SLEEVE SP 11864	1	GREASE PLUG WASHER SP 282	1
FORWARD PROPELLER HUB SP 11865	1	GREASE PLUG SP 170	1
AFTER PROPELLER HUB SP 11866	1	FORWARD PROPELLER HUB KEY SP 11892	2
GREASE RING SP 3010	1	PROPELLER KEEP SCREW SP 8699	4
LOCK PLATE & PIN SG 3564	8	AFTER PROPELLER SHAFT NUT SP 468	1
LOCK PLATE SCREW SP 11759	1	HORIZONTAL RUDDER SP 13088	2
GREASE RING SET SCREW SP 12471	2	HORIZONTAL RUDDER YOKE SG 3557	1
		UPPER VERTICAL RUDDER BLADE SP 13325	1

PARTS FOR TAIL

KEY: SG—STOCK GROUP • SP—STOCK PART

NUMBER OF PIECES		NUMBER OF PIECES	
LOWER VERTICAL RUDDER BLADE SP 13091	1	VERTICAL RUDDER ADJUSTING ROD SP 11964	1
VERTICAL RUDDER YOKE SG 3558	1	EYE SP 11963	2
HORIZONTAL OUTBOARD BEARINGS SG 3844	2	CLAMP SCREW SP 3054	2
VERTICAL OUTBOARD BEARING SG 3845	2	COTTER PIN SP 483	1
HORIZONTAL RUDDER ADJUSTING ROD SP 11962	1	SCREW SP 14333	12

TOOLS FOR TAIL

NUMBER OF PIECES		NUMBER OF PIECES	
SOCKET WRENCH No. 183		PROPELLER LOCK No. 417	
RUDDER GAUGE No. 44		PROPELLER NUT WRENCH No. 185A	

NOTES FOR TAIL

NOTES FOR TAIL

