

I'll Take The Conn

The recent tragedy of the Hobson may have served to make the public aware of the awful responsibility assumed by the line naval officer who lawfully utters the phrase "I'll take the Conn". Naval officers have always ^{known} ~~been aware of~~ the ~~the~~ preparedness to take the Conn requires a good knowledge of shiphandling, wide familiarity with current tactical doctrine, ^{and} the capacity for intense concentration and instant judgments. ^{The Navy} ~~Our~~ system for ^{the individual control of} ~~controlling~~ ships in formation at sea is ^{woven} ~~designed~~ around the ^{its} ~~Navys~~ long experience in the science of conning. The Commanding Officer is the elder statesman of the conn. His longer and usually more varied experience makes him the officer best qualified to handle the ship in these normal or emergency situations which are beyond the capabilities of his officers of the deck. The Executive, second in command, runs the entire administration of the ship, ^{in part} to keep the Commanding Officer free from all but broad policy and therefore constantly available on the bridge to take the Conn when required. For those situations in which the ~~prerequisite~~ ^{is not only an} for unusually skillful conning lasts beyond the period of one individual's ~~physical endurance~~ the wise Commanding Officer has prepared his already experienced Executive Officer and Heads of Departments to keep the bridge in his stead. Below this team of senior officers available for conning in unusual situations, there is the routine conning organization consisting of an experienced OOD, ~~capable~~ ^{responsible} of handling most emergencies and ~~wise~~ enough to know exactly when to call his Commanding officer to the bridge to assume the Conn. And because there must always be a source from which to develop qualified officers of the deck, we have the tradition that an OOD may delegate the actual Conn to a JOOD while retaining, as OOD full responsibility for the actions of his juniors.

2708
8000
540
3600
230

So ~~it is~~ ^{it is} that at any rank from ensign to Captain ~~we may~~ the line naval officer may find himself confronted with the awesome ^{responsibility} need for assuming the Conn. While this situation has always existed two trends have served to increase the difficulty of the task for the modern conning officer. The first of these is the ~~increasingly~~ ^{increasingly} limited time available to a naval officer in which to develop conning skills. The necessity for rotation through sea and shore billets, the necessity for advanced professional education in order to keep abreast of modern complexities, and the ~~greater~~ ^{increasing} proportion of naval officers to operating ships have served to deny the modern line officer the ~~same~~ ^{practice with which to develop the} degree ~~that~~ of conning skill that belonged to earlier generations. The second trend is that the very technical improvements which give the conning officer better information ~~than~~ have served to increase the scope of tactical operations. The development of radar and better ^{radio} ~~radio~~ have ~~made~~ ^{resulted in} high speed maneuvers in restricted visibility ^{what was} beyond the realm of possibility a few years ago. Exigencies of the service have led us to use our modern conning tools for joining formations in darkness or fog, for approaching ^{replenishment stations} service ships from ^{ahead} ~~for replenishment~~, for rotating screens, and ~~other evolutions~~ all of which may result in ships going in different directions at close quarters with no sight contact on one another. ~~Therefore~~ ^{Therefore} the conning officer of previous years could take some comfort, while struggling to gain a glimpse of the ~~formation~~ ^{at the by day} guide, ~~at night~~, from the fact that his most difficult tactical evolutions would be reserved for the hours when he could ^{see} ~~use~~ the target angles and bow waves of other ships. The modern conner must be prepared for any evolution at any hour because of the reliance our Navy puts on electronics devices.

To facilitate the interpretation of electronics information

3
certain organizations have been developed aboard ship. Personnel stationed at key stations are responsible for advising the conning officer of the locations of ships he cannot see, of the best course and speed for him to select in performing a particular evolution, of the effect of any particular course or speed which the conner may finally take.

However, it is ~~functional to~~ ^{inherent in} the concept of the Conn that a Conning Officer must be qualified and able to judge for himself, the safety and adequacy of any recommendations which he receives from other sources. At the same time, in order to ~~perform his function of remaining in xxv~~ a position (and retaining the night vision with which) to handle the ship "in extremis", the conner should not use lights and plotting devices to check maneuvering solutions. If he is not to become merely a safety officer, there remains to the conning officer only, ^{the hardy rules require work with} the use of mental ~~thumb~~ ^{rules} of thumb, "seamans eye, or claculated guess. ^{was which judge the T. kind situation in per. manner}

^{Here we note}
~~The material people have given the shiboard conning officer~~ ^{has} a radar presentation at his bridge station with which he is able to retain a plan view of ~~most~~ of his formation without losing appreciably his night vision. While it is ^{usually} necessary to have personnel operating this radar to supply information under routine circumstances, the careful conning officer will develop such facility with the mechanical knobs and dials that he can quickly select for himself in a crisis, the scale and target infomation he needs. ^{This conning officer} ~~at~~ ^{some}

^{daily} ~~at~~ ^{daily} ~~the~~ ^{mechanical} ~~cross~~ ^{cross} ~~data~~ ^{data} ~~with~~ ^{with} ~~which~~ ^{which} ~~he~~ ^{he} ~~can~~ ^{can} ~~select~~ ^{select} ~~for~~ ^{for} ~~himself~~ ^{himself} ~~in~~ ⁱⁿ ~~a~~ ^a ~~crisis~~ ^{crisis} ~~the~~ ^{the} ~~scale~~ ^{scale} ~~and~~ ^{and} ~~target~~ ^{target} ~~infomation~~ ^{infomation} ~~he~~ ^{he} ~~needs~~ ^{needs}. ^{engaging} ~~the~~ ^{engaging} ~~conning~~ ^{conning} ~~officer~~ ^{officer} ~~at~~ ^{at} ~~the~~ ^{the} ~~bridge~~ ^{bridge} ~~station~~ ^{station} ~~with~~ ^{with} ~~which~~ ^{with} ~~he~~ ^{he} ~~is~~ ^{is} ~~able~~ ^{able} ~~to~~ ^{to} ~~retain~~ ^{retain} ~~a~~ ^a ~~plan~~ ^{plan} ~~view~~ ^{view} ~~of~~ ^{of} ~~most~~ ^{most} ~~of~~ ^{of} ~~his~~ ^{his} ~~formation~~ ^{formation} ~~without~~ ^{without} ~~losing~~ ^{losing} ~~appreciably~~ ^{appreciably} ~~his~~ ^{his} ~~night~~ ^{night} ~~vision~~ ^{vision}. While it is ^{usually} necessary to have personnel operating this radar to supply information under routine circumstances, the careful conning officer will develop such facility with the mechanical knobs and dials that he can quickly select for himself in a crisis, the scale and target infomation he needs. ^{This conning officer} ~~at~~ ^{some}

The Second Requirement

Commanding officers have always needed the ability to visualize in their minds, the picture of the developing tactical situation whenever ships have operated together at sea. As a matter of fact from the standpoint of skill & judgment, the professional ability required in previous generations was probably greater than it is today. Certainly the judgment of the "seaman's eye", based as it was on accurate ~~observation~~ estimates of range, speed, turning angle, etc, is an almost vanished art among young naval officers. ~~The modern naval officer, who must learn on the ~~board~~ removed one whole step from the commanding officer. The modern commanding officer has been given the advantage of a constant plan view picture of the formation. He has been given assistants, in other positions about the ship, who see the same plan view, and can devote full time to providing accurate information on range, course and speed.~~

~~The effect of these improvements is to no longer improve the commanding officer. ~~the modern commanding officer must~~~~

~~The modern commanding officer, ^{largely} freed from the need to estimate range and speed. He is largely freed from the all-around ^{visual} search since~~

~~The range, and speed, and course of~~

The modern command is greatly assisted in range, speed, and course detection. He is electronically assisted in his all-around visual search. But he has not received these gains for nothing. The assistance provided by electronics means has largely been ~~part~~ analyzed by other personnel. The

has placed upon the Comd officer the responsibility to check, in his own mind, data received and recommendations made for other personnel.

Experiences indicate that there are a few simple, ^{multitude of} rules which can be so developed that good mental answers can be obtained to check one's Comd. By keeping these rules few and simple it has been found possible to call up them a time of great stress without confusion. By a combination of these rules, most of the Comd situations facing the officer can be resolved wholly or partially without necessity of mental calculation required to work down.

These rules are:

1a. 3 min rule
Rule 1: The sinking Ls increase by .1 for each 6° increase up to 42°

This is sufficiently accurate for Comd purposes. It is certainly simple yet its use can help to resolve many Comd problems:

Example A: Your ship has radar contact on a vessel 10° on your starboard bow at 12,000 yards. CIC ~~gives you a report~~ reports vessel is a reciprocal course and one speed ahead at 1000 yards. You know from the sonar that the vessel is now 2000 yards from you and can show therefore 1 on 2 on your starboard [sin 10° = 1/3 sin 6°; 12000 - 1/3 = 2000]. Check once ^{deliberately reduce the column} CIC who has either ^{deliberately reduced the column} ~~the~~ ~~fact~~ ~~to~~ ~~be~~ ~~so~~ ~~clear~~ to insure greater safety at sea.

Example B:

Your ship is proceeding from a parallel astern to a parallel ahead in the forward. Your Capt has directed you to close the vessel ahead of you by 1000 yards ahead. ~~You are making 15 knots~~ ~~now the other ship is ahead of you~~ ~~know the true bearing~~ ~~4000 yards~~ ~~ahead of you~~ ~~you are~~ ~~to~~ ~~be~~ ~~ahead~~ ~~of~~ ~~her~~ ~~in~~

The ~~next~~ office of today who prepares himself for the
Carr ~~must~~

The ~~proper~~ performance

To the many ^{professional skills} ~~requirements~~ which I've always been up to
for your country, the modern developments have added their new ones

The first of these is complete familiarity with the ^{drugs} ~~radio~~ ~~speakers~~ & the
recesses the ~~first~~ ^{policy} ~~and~~ development of ~~quality~~ ~~mentally~~ ~~newly~~ ~~the~~
developing ~~techno~~ ~~article~~ ~~without~~ ~~the~~ ~~benefit~~ ~~of~~ ~~the~~ ~~best~~ ~~of~~ ~~the~~ ~~best~~
angle, low cost, turning work, etc. The ~~purpose~~ ~~of~~ ~~the~~ ~~article~~ ~~is~~ ~~to~~

~~with~~ ~~regard~~ ~~to~~ ~~the~~ ~~first~~ ~~step~~

The ~~first~~ ^{new} ~~step~~

	178
576 / 1000	
576	
4240	
4088	
2080	
07	

The ~~second~~ ~~step~~

① a set of simple rules

riches - 18% techno demands
in 6" accidental
your ~~in~~ ~~crease~~

② started ~~applied~~ a - you must ~~man~~ - ~~four~~ ~~cost~~

CC/pt - do may get a ~~revenue~~ ~~on~~ - ~~where~~ ~~to~~ ~~turn~~ - ~~more~~ ~~no~~
o EPA - ~~show~~ ~~show~~ o ~~clear~~ ~~future~~ o ~~pen~~ ~~above~~ ~~of~~ , ~~acting~~

o st ~~get~~ - ~~to~~ - ~~you~~ ~~don't~~ ~~know~~

o ~~rel~~ ~~ques~~ + ~~other~~ ~~decs~~

"I'LL TAKE THE CONN"

The recent tragic collision-sinking of the Hobson may have served to make the public aware of the awful responsibility assumed by the line naval officer who lawfully utters the phrase "I'll take the Conn". Naval officers have always known that preparedness to take the Conn requires a good knowledge of ship handling, wide familiarity with current tactical doctrine, and the capacity for intense concentration and instant judgments. The Navy system for~~the~~ individual control of ships in formation at sea is woven around the naval service's long experience in the science of conning. The Commanding Officer is the elder statesman of the Conn. His longer, and usually more varied experience, makes him the officer best qualified to handle the ship in those normal or emergency situations which are beyond the capabilities of his officers of the deck. The Executive, second in command, runs the entire administration of the ship, in part to keep the Commanding Officer free from all but broad policy and therefore constantly available on the bridge to take the Conn when required. For those situations in which the requirement for unusually skillful conning continues beyond the limit of one individual's physical endurance, the wise Commanding Officer has prepared his already experienced Executive Officer and Heads of Departments to keep the bridge in his stead. Below this team of senior officers available for conning in unusual situations, there is the routine conning organization ^{headed by} ~~consisting of~~ an ~~experienced~~ experienced OOD, capable of handling most emergencies and responsible enough to know exactly when to call his Commanding Officer to the bridge to assume the Conn. And because there must always be a source from which qualified officers of the deck are developed, we have the tradition that an officer of the deck may ¹ delegate the actual Conn to a Junior Officer of the Deck, while retaining as OOD full responsibility for the actions of his junior.

So it is that at any rank the line naval officer may find himself confronted with the awesome responsibility of assuming the Conn. While this situation has always existed, two trends have served to increase the difficulty of the task for the modern conning officer. The first of these is the increasingly limited time available to the naval officer during which he may develop conning skills. The necessity for rotation through sea and shore billets, the necessity for advanced professional education in order to keep abreast of modern complexities, and the increase in the proportion of naval officers to operating ships-all have served to deny the modern line officer the practice with which to develop the conning skill that belonged to earlier generations. The second trend is that the very technical improvements which give the conning officer better information have served to increase the scope of tactical operations. The development of radar and better voice radio facilities have led to high speed maneuvers in restricted visibility which were beyond the realm of possibility a few years ago. Exigencies of the service have led us to use our modern conning tools for joining formations in darkness or fog, for approaching replenishment stations alongside service ships from initial positions ahead, for rotating screens, etc., all of which may result in ships going in different directions at close quarters with no sight contact on one another. The conning officer of previous years could take some comfort, while struggling to catch a glimpse of the guide or the fog buoy, from the fact that his most difficult tactical evolutions would be reserved for the hours when he could see the target angles and bow waves of other ships. The modern conner must be prepared for an evolution at any hour because of the reliance which our Navy puts on electronics devices.

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are instinctive. ^{Only} /When so well learned that they recede into the subconscious processes can they assist in the conscious conning evaluation. All are a matter of continuous training. They are:

1. Adept, mechanical familiarity with the bridge radar.
2. Rapid, accurate mental calculation by the use of thumb rules which are as well learned as the ~~the~~ multiplication tables of the primary school student.
3. The ability to ~~consideration~~ retain the pertinent and discard the irrelevant in each developing tactical situation.

Let us turn to the detailed consideration of these items.

FAMILIARITY With the Bridge Radar

The shipboard conning officer has a radar presentation at his bridge station with which he is able to retain a plan view of most of his formation without losing appreciably his night vision. While it is usually necessary to have personnel operating this radar to supply information under routine circumstance the careful conning officer will develop such facility with the mechanical knobs and dials that he can quickly select for himself in a crisis, the scale and target information he needs. He should develop during good visibility the mechanical coordination with which to operate his bridge repeater quickly in the dark. This mechanical technique should become as much a subconscious routine as is the shifting of gears to the experienced driver. Anything less than perfection in this technique will deny the conning officer his electronic "eyes" in that one crisis when the repeater operator becomes incompetent, when talker time must be eliminated or when overall orientation rather than selective information is required.

Mental Rules of Thumb

Conning officers have always needed the ability to visualize in their minds the picture of the developing tactical situation, whenever ships have operated together at sea. As a matter of fact

from the standpoint of skill and judgment, the professional ability required in previous generations was probably greater than it is today. Certainly the judgment of the "seaman's eye", based as it was on the accurate estimate of range, speed, turning ~~wires~~, etc., is an almost vanished art among younger naval officers. The modern conning officer has been given the advantage of a constant plan view picture of the formation. He has assistants, in other positions about the ship, who see the same plan view and devote full time to providing precise information on ranges, courses, and speeds.

The modern conner is greatly assisted in in range, speed, and course determinations. He is electronically assisted in his all around visual search. But he has not received these gains for nothing. The assistance provided by electronics means has largely been analyzed by other personnel. This has placed upon the conning officer the responsibility to check, in his own mind, data received and recommendations made from other personnel.

Experience indicates that there are a few simple mathematical rules which can be so developed that quick mental answers can be obtained to check one's conning. By keeping these rules few and simple it has been found possible to call upon them in time of stress without confusion. By a combination of these rules, most conning situations can be resolved wholly or partially without sacrificing mental alertness required to make decisions.

Rule #1 - The 3 Minute Rule

The fact that the distance traveled in yards during a 3 minute period is equal to the speed of a ship in knots multiplied by 100 is so well known in the Navy that it is only listed here for the reason that it will be referred to later.

Rule #2 - The Sine of 6 degrees rule

The sines of acute angles increase by .1 for each 6 degrees up to 42 degrees. This is sufficiently accurate for conning purposes. It is certainly simple. Yet its use can resolve many