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OF THE UTILIZATION OF
UNRESTRICTED LINE OFFICER
FINANCIAL MANAGEMENT SUBSPECIALISTS.

William Barclay Tirrell

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

CONSTRAINTS INFLUENCING MEASUREMENT
OF THE UTILIZATION OF
UNRESTRICTED LINE OFFICER
FINANCIAL MANAGEMENT SUBSPECIALISTS

by

William Barclay Tirrell

March 1978

Thesis Advisor:

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One of a number of possible equations usable as a measuring device is presented along with discussion of several constraints viewed as impacting on the measurement. Where possible, quantitative data has been presented to demonstrate the impact.

UNCLASSIFIED SECURITY CLASSIFICATION OF THIS PAGE/When Deta Entered. Finally, several means are presented for controlling the constraints or at least accounting for them in the analysis of utilization. Constraints Influencing Measurement of the Utilization of Unrestricted Line Officer Financial Management Subspecialists

by

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Submitted in partial fulfillment of the requirements for the degree of

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One of a number of possible equations usable as a measuring device is presented along with discussion of several constraints viewed as impacting on the measurement. Where possible, quantitative data has been presented to demonstrate the impact.

Finally, several means are presented for controlling the constraints or at least accounting for them in the analysis of utilization.

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I. INTRODUCTION AND CONSTRAINT PRESENTATION

The Congress, which controls the purse strings of the Federal government, should rightfully expect a return on any public funds it appropriates for investment. In this instance, public funds are invested to create the financial management expertise required by the Navy to manage financial resources. The Navy must then assure the Congress that the personnel assets that are created will remain assets for a time period sufficient to allow them to usefully contribute to the operation of the Navy and make the benefits of the education exceed the cost.

Presumably, long before an asset is acquired, the realization that the asset is or will be required emerges. The Navy recognized the technological explosion which had occurred in conjunction with World War II and its incumbent requirement for an increase on technical expertise in the officer corps. 1

As officers were assigned and reassigned to shore tours which made use of their particular education and experience, a pattern emerged that ultimately led to the coding of billets to reflect the traits required by an incumbent in that billet. These traits are rank, designator, and a subspecialty code which reflects not only what subspecialty but

Lee, L. M., Policies Concerning the Education and Assignment of the Unrestricted Line Officer: Trauma, Turbulence and Tenacity, p. 21, May 1972.

also the level of experience required both within the subspecialty and overall.

Once having established (or projected) a requirement for an asset, the asset acquisition must be planned and carried out. Once acquired, the asset must be economically utilized to both aid the organization and, in the case of human assets, satisfy the requirements of the individual. Having a closed personnel system, the Navy has had to primarily generate the required expertise from within its available personnel resources and/or exercise foresight in acquiring new personnel resources.

Title IV of the National Security Act Amendments of 1949 was the instrument utilized by Congress to direct the Department of Defense to increase its attention to the management of its financial resources. This was partially accomplished through the establishment of controller positions within each of the military services and the assignment of various responsibilities to the controller's position. 2

It would be erroneous to assume that the military services, and more specifically the Navy, had not already devoted attention to managing these resources. For instance, since 1941 the Office of Budget and Reports had been responsible for budget preparation and execution within the Navy's

²U. S. Congress, Senate, Promotion of Economy and Efficiency Through Establishment of Uniform Budgetary and Fiscal Procedures and Organizations, Title IV, Public Law 216, 81st Congress, p. 2, 1949.

organization.³ Title IV of the Act can nevertheless be viewed as the impetus for the creation of the formal controller organization and its many subdivisions that are in existence today.

The creation of a responsible office such as controller brings with it the obvious requirement for staff support.

As the controller concept spread vertically through the Navy, a requirement was generated for personnel who were trained and educated in the skills needed for financial management as encompassed by the controllership function.

In 1951, the Navy established the Navy Graduate Comptrollership Program based on a curriculum developed by George Washington University. In conjunction with the Planning, Programming and Budgeting System (PPBS) installed in the Department of Defense in the early 1960's, the controllership aspect of financial management was enlarged upon and this enlargement exerted an influence on the expansion of the graduate program at George Washington University.

The PPBS concept, as a defined means of program budgeting, is a very strong element affecting the organizational goals of the Navy. It provides a framework for translating ideas, concepts, strategies, and threat assessments into budget

Financial Management in the Navy, NAVEDTRA 10792-D, p. 21.

Hickman, D. E., Officer Education for Navy Financial Managers, M. B. A. Thesis, George Washington University, p. 22, 1972.

dollars to enable pursuit of goals deemed worthwhile and necessary. There are three distinct phases within PPBS which can be classified as follows:

A planning phase wherein global threat is assessed and strategy to meet that threat is defined.

A programming phase which translates the strategic plans into alternative force structure programs defined in terms of men, material, and financing.

A <u>budgeting phase</u> which expresses the programs in annual funding requirements.

These areas, at least, would require the managers and their staffs at the various echelons of commands to possess the technical knowledge of the Navy and its missions and the financial management skills to ultimately translate these missions into budget requests.

It will be assumed that the decision to train and use Unrestricted Line (URL) officers in specific financial management subspecialist billets has been made and justified; thus, comparisons with staff corps officers and/or civilians will not be undertaken. The thrust of this thesis will be toward the evaluation of how well these URL financial management subspecialists are utilized.

In this evaluation, the first decision to be made concerns the total need for the asset within the Navy. The result of the process of determining need is a quantity of billets (or jobs) which require trained personnel to fill them. Specifically, commands perceiving a need for a billet which is to be

⁵Financial Management in the Navy, NAVEDTRA 10792-D, p. 52.

identified as requiring an Unrestricted Line (URL) officer as opposed to an officer from a staff corps who is a financial management subspecialist, must further define the billet by the educational skill level required by an incumbent in the billet. Ultimately, the command must justify its request for a financial'subspecialist in accordance with the criteria and procedures established by the Chief of Naval Operations as presently expressed in OPNAV Instruction 1211.6E (Change 1). There is at least one other set of criteria recommended. Presuming for the moment that the various commands perceiving the need for financial management subspecialists have justified their perceptions as required by Navy directives, the second decision can be made. That decision is how many URL financial management subspecialists are required. Seemingly the decision is elementary. Enough personnel assets are provided the education or skills needed to fill the number of billets one for one.

With these unfettered conditions (a given number of billets and sufficient URL financial managers to fill all of the billets simultaneously), the need to measure the degree to which the URL financial management subspecialist assets are properly employed in financial management (FM) billets or utilized is easy. It is, by inspection, 100% utilization. Regrettably, the reality of utilizing URL financial management subspecialists (URL - FMS) is not that unconstrained. There are variables which affect how an URL - FM is utilized.

⁶Chief of Naval Operations (OP-92SA), Letter: Serial 92SA/87731 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, Appendix C, 20 June 1977.

The variables affect both the numerator and denominator of the following equations:

- 1. # of URL FM billets correctly filled
 Total # of URL FM billets to be filled
 - = percentage utilization
- 2. # of URL FM'S correctly filling URL FM billets
 Total # of URL FM'S available for URL FM billets
 - = percentage utilization

Inasmuch as utilization is being defined as the degree (measured by percentage) that URL - FM'S are correctly filling FM billets, either equation could be used. The first expresses what percentage of billets are correctly filled regardless of the personnel assets available (correctly filled will be defined). The second accounts for the proper employment of the URL - FM personnel and ignores the billet constraint.

Each URL - FM billet has three identifying elements; the rank of the officer, the officer's designator, and the specific subspecialty code including suffix. For example, a billet could have the following code:

1110 G 0031P

This code means that a regular (vs reserve) Surface Warfare Specialist, Unrestricted Line (1110) officer in the rank of Captain (G) possessing a financial management subspecialty based on a master's level of education (0031P) is required. Inasmuch as each of the components is specific, any incumbent

in that billet must possess these three codes in order to have the billet correctly filled. The officers with the qualifications listed below, if incumbent in the billet defined above, would make the billet not correctly filled.

G 0031P 1) 1115 2) 1110 Н 0031P 3) 1110 G 0032P 4) 1110 G 00310

In case 1), the officer is reserve and not regular. In case 2), the officer is a Commander not a Captain. Case 3) shows a material management subspecialist, and case 4) shows a proven subspecialist vis a vis a subspecialist.

For an extreme example using both equations, the following arbitrary data can be used.

Total URL - FM billets to be filled 100
Total available URL - FM'S 50
Total URL - FM billets correctly filled
therefore # of URL - FM'S correctly filling
URL - FM billets. 50

Using the data, equation 1 shows 50% utilization. This percentage could cause consternation unless it is noted that 100% of available personnel assets are being correctly utilized as equation 2 shows.

An argument can be made that either or both of the equations can be used to measure utilization inasmuch as they relate personnel and billets having the same characteristic - URL - FM'S identified by designator, rank, and specific subspecialty code including suffix. To demonstrate the frailty of this argument, two constraints (of the several to be discussed) will be inserted.

First, there is a requirement of URL - FM'S to complete operational sea tours which are arbitrarily considered here as more important than subspecialty tours. Second, there are more total billets than total personnel requiring some billets (specifically URL - FM billets) to be intentionally left vacant or 'gapped'. Arbitrary impacts on the data used to first demonstrate the equations will now be introduced.

Tota1	URL - FM billets	100
	FM billets purposely left vacant	15
Total	URL - FM billets to be filled	85
Total	URL - FM'S	50
URL -	FM'S on sea tours	5
Tota1	available URL - FM'S	45
Total	URL - FM billets correctly filled	
theref	Fore # of URL - FM'S correctly filling	
	FM billets	45

The percentages are now,

Eqn 1
$$\frac{45}{85} = 53\%$$

Eqn 2 $\frac{45}{45} = 100\%$

The impact is felt in both equations. The raw numbers in both equations are different and there is a different percentage answer for the first equation. No attempt will be made to justify the arbitrariness of the numbers chosen. The important point is that there are variables that affect either or both equations.

It is proposed that the following equation be employed to measure utilization of the URL - FM personnel assets with the goal being 100% utilization.

percentage utilization=# of URL - FM billets adequately filled # of URL - FM billets available for filling The constraints which will be applied are both qualitative and quantitative in nature. Whenever possible, quantitative data will be presented.

The constraints, incorporating fluctuations and their causes and effects, are:

- 1. The total billet strength of the Navy.
- 2. The total officer personnel ceiling authorized for the Navy.
 - 3. The total URL FM billet strength of the Navy.
 - 4. The total URL FM personnel assets in the Navy.
- 5. The timing of URL FM billet availability when personnel assets are available.
- 6. The timing of URL FM personnel asset availability when billets are available.
 - 7. The individual characteristics of the URL FM billet.
- 8. The individual characteristics of the URL FM officer specifically rank, designator, sex, subspecialties, screening board determined qualifications and marital status.
- 9. Promotion potential and its perceived relationship to duty assignments.
 - 10. The personal desires of the URL FM officer.
- 11. The desires of the commander to whose staff an URL FM officer may be assigned.
- 12. The ability to assess the first 11 constraints with existing information collection.
- 13. The term 'adequately filled' is used in lieu of 'correctly filled' to indicate that one or more of the three

characteristics referred to in billet definition may not be an exact match with the characteristics of the incumbent in a billet. The incumbent, nevertheless has sufficient financial management subspecialty qualification.

Following is a discussion of these constraints; some being discussed together. Their impact will be assessed quantitatively, qualitatively, or by example when necessary.

II. CONSTRAINT DISCUSSION

The equation offered in Chapter I as a measure of utilization will probably not please all persons or groups who would measure utilization. Regrettably, in many areas that are open to measurement, those who measure are mysteriously myopic in defining and applying standards. Occasionally the mystery is uncovered and all too often found to be a bias of some sort ranging from well-intended to vicious. At other times, the myopia is easily explained in terms of a responsibility sphere which dictates that the measurer view the area being measured in specific or narrow terms. Experience with the fleets has demonstrated this myopia time and again. The question of "What is more important..." or the statement that "Nothing is more important than..." has been heard repeatedly. In most cases, it is difficult to find anything more important than the specific area in question (although areas of equal importance often abound) and more difficult yet to convince any inspector or critic that his specific area ranks second to any other area. Time and experience have taught that, while relative importance may be difficult to refine, relative imperativeness is not. The degree to which one thing is more imperative than another sets priorities that simple importance may be unable to do adequately.

By accounting for the factors that affect the distribution of personnel, a more realistic measurement of the Navy's

ability to utilize the URL - FM personnel assets (that are available after more imperative and therefore higher priority needs are met from that pool of personnel assets) can be undertaken. Simultaneously, any constraints that impact on billets may be incorporated.

A. PERSONNEL CONSTRAINTS

The possible impact of each of the first eleven constraints on the personnel portion (numerator) of the equation will be assessed first. No attempt is being made to determine how many personnel are required to fill a number of billets, however, several of the constraints to be discussed would impact on that determination. As appropriate, comment of the impact of the constraints on the input of URL officers into FM training programs will be made.

1. Total Billet Strength of the Navy

This constraint identifies the total number of officer jobs the Navy determines to be needed to perform all missions assigned. An increase or decrease in total billets may carry with it an increase or decrease in total URL - FM billets.

The increase or decrease in URL - FM billets will be discussed as a separate constraint.

If, with all other constraints held constant over a time period, the total number of billets increases above the level of available personnel, a problem of prioritization would exist inasmuch as there would obviously be more billets

than personnel. It is equally clear that some billets would remain vacant either permanently or on some form of rotating basis. The vacancy aspect will be further discussed under B. BILLET CONSTRAINTS. The prioritization caused by billets being in excess is the situation presently in existence. No quantitative data is available as to how this prioritization impacts on the adequate filling of URL - FM billets. There are vacant billets, billets filled inadequately, and billets filled with obviously overqualified personnel among URL - FM billets. Regrettably, there are no records kept as to which billets are affected by this constraint although it is qualitatively obvious that the excess of billets over personnel creates a situation wherein URL - FM assets may not always be adequately used as URL - FMSs. The other constraints discussed later will explore this syndrome more fully.

If the billet total were equal to the authorized personnel level but different in composition, the number of URL - FM billets could be affected. This too will be discussed under BILLET CONSTRAINTS.

Finally, if the total number of billets were to decrease below the Congressionally authorized personnel ceiling, there would be an impact on the number of URL - FM billets adequately filled. Holding all other constraints constant, more selectivity could be exercised in the detailing of officers to billets. This selectivity could result in closer matches of officer talent, experience, and characteristics to billet requirements. This could result in an

increase in the number of URL - FM billets adequately filled under the existing definition presuming the billets are presently less than 100% adequately filled. It could also result in the term 'adequately filled' being upgraded to a more stringent definition. Finally, the increased selectivity could result in better work by billet incumbents who were more than just adequately qualified. Inasmuch as no data is available on the impact of this situation nor is it likely that this situation would be allowed to exist with personnel costs what they are (and are projected to be), no quantitative information is presented.

2. Total Authorized Personnel Ceiling

Congress authorizes each of the military services to employ uniformed personnel up to a specified number (ceiling). Additionally, there are mandated ceilings on how many personnel are in each rank. The same three relationships exist for this constraint as were discussed for total billets, i.e., total personnel exceed, equal, or are less than total billets. To have personnel exceed billets would allow the same selectivity alluded to earlier. The liklihood of this situation arising is remote and therefore not a valid consideration.

With total personnel equal to total billets (including billet allowances for officers in transit, in hospital, etc.), the prospect of having all billets at least filled increases to 100% barring death or some similar act of God. This situation is also unlikely to occur and, since not presently in existence, will not be discussed.

The existing situation is that of personnel being outnumbered by billets. The problem of prioritization occurs and with at least two results. First, billets are left vacant. This is an obvious and necessary result. The second result is that billets that are filled may be inadequately filled. This overall constraint is not supportable by specific data as it would require analysis of every billet in the Navy with simultaneous analysis of each officer who comes available for detailing to billets. Nevertheless, a general effect on personnel assignment is obvious. The data presented will be limited to URL - FM personnel assets possessing one of the following four codes:

- P Master's level of education
- Q Master's level of education proven subspecialist
- S Significant experience
- R Significant experience proven subspecialist⁷

This is done to enable comparison between personnel data dated as of 31 May 1977 and personnel data collected by the author in November 1977 from PERS 402 dated 11 October 1977.

The URL - FM personnel assets will not be presented by ranks.

The effects on the URL - FM personnel assets, in terms of reducing the quantity under consideration is as follows:

Department of the Navy, Office of the Chief of Naval Operations, OPNAV INSTRUCTION 1211.6E (with change 1), Enclosure (1), p. 14, 10 April 1975.

May 31 data⁸

Total URL - FMS's (P, Q, S, R)

October 11 data

Total URL - FMS's (all suffixes)

Less: all suffixes except P, Q, S, R

-25

294

Eliminated from the October data are two C-, one D-, six G-, and 16 T-suffixed personnel.

The total of P, Q, S, R billets as of May 31, 1977 was 113. 9 Despite a better than two to one ratio of personnel, only 51 billets were filled with qualified (undefined) personnel. 10 Nevertheless, the remaining 188 were in other billets. The reasons for the failure to fill the other 62 billets with qualified personnel were not explored in the reference. Of the 100 billets identified as of 31 October 1977 based on OP-01CE data, 51 were identified as being at least adequately filled with URL - FM personnel on 11 October 1977. Again, the URL - FM personnel who were not in URL - FM billets were in other billets. Exploration of the causes for not filling URL - FM billets with URL - FM personnel will be undertaken as part of the discussion of the other constraints.

⁸Chief of Naval Operations (OP-92SA), Letter: Serial 92SA/87731 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, Appendix F, 20 June 1977.

⁹Ibid., Appendix E.

¹⁰Ibid., Appendix G.

One hypothetical question is posed - Does the failure to use URL - FM personnel in URL - FM billets cause them to be used elsewhere or does their use elsewhere preclude use in URL - FM billets?

3. Total URL - FM Billet Strength

The primary effect of this constraint is on the denominator or billet portion of the equation. This constraint does impact on the determination of the quantity and makeup of the URL - FM community inasmuch as URL - FM personnel are created to meet the requirements of the billets. As the billet composition alters, the input, particularly to the costly education programs, correspondingly alters. The impact of this constraint will be dealt with in the discussion of billet constraints. Of note, however, is the shift from 113 to 100 P, Q, S, R billets from 31 May to 31 October 1977. The total shift (all suffixes) was from 134 to 120 over the same time frame.

4. Total URL - FM Personnel Assets

The obvious impact of this constraint is on whether or not assets are sufficient to meet requirements. It is obvious that total assets (personnel) exceed total requirements. This is true for each of the suffixes.

	141	ау	0000001			
	Billets	Personne1	Billets	Personne1		
P Q S R	54 36 18	173 37 23	46 34 17	147 72 54		
10	113	239	100	294		

The excess of personnel by rank and suffix over billets is true for most ranks and suffixes.

May 1977

	Bils	Pers	Bils	Pers	Bils	Pers	Bils	Pers	
	CAPT		CDR		LCI	LCDR		LT, LTJG, ENS	
P Q S R	11 19 4 2	25 29 26 10	17 14 5 0	51 29 14 9	17 1 7 1	49 14 12 2	1 0 1 0	21 0 2 0	

The Navy controls the personnel assets inasmuch as selection board action is required prior to assignment of most subspecialty codes. Additionally, the Navy controls input into Navy financed educational programs within funding limitations imposed by Congress. Despite this control ability, some of the URL - FM personnel assets are created at no cost to and perhaps with no prior knowledge by the Navy. Of the 228 URL - FM personnel in the inventory as of 11 October who were identified by suffix (C, D, G, P, Q) as having received education at or above the masters level, 40 had done so at their own expense.

In a situation wherein total requirements exceed total assets, the ability of the assets to exhibit versatility may be of tremendous value. It may well be that the versatility of the URL - FM is a mixed blessing. It is obvious that there are sufficient URL - FMS to adequately fill all billets given that no other constraint interferes. This interference, for whatever reason, results in less than 100% utilization.

5. Timing

This constraint incorporates the fifth and sixth constraints outlined in Chapter I. Those are the timing of URL - FM billet availability and the timing of URL - FM personnel availability. Regrettably, data on this constraint on a billet by billet or officer by officer basis is not available yet several hypothetical examples will illustrate how this constraint impacts.

The impact of prioritization must be addressed prior to presenting the hypothetical cases. Prioritization was the effect of total billets exceeding total personnel. The means to achieve the effect was the imperativeness of one billet over another. What must be pointed out is that prioritization is not static. If it were, personnel assignment would be simplified to running down a prioritized list of available billets until the characteristics and qualifications of the officer available matched the requirements of a billet. There are two difficulties. Any of a number of things could cause yesterday's lowest priority billet to become today's

highest with no change to the billets that used to be of higher priority. Secondly, there are other constraints which will be discussed in following paragraphs that impact on whether or not an officer can be detailed to a billet.

If an URL - FM officer is available for detailing and a URL - FM billet is available for which the officer is qualified, a match is possible. If, however, there is another higher priority billet (not URL - FM) for which the officer is qualified, the URL - FM billet will be left vacant. Does this imply improper utilization of the URL - FM asset? No, it merely points out the effect that prioritization can have on assignment.

Accepting prioritization as present (regardless of the rationale used to create the prioritization), the first case will be considered -- that of an available URL - FM personnel asset without an available billet. Inasmuch as there are no URL - FM billets, the officer will be utilized in another billet for which the officer is qualified. The reason is obvious in that holding the officer in some form of limbo status in an environment of overall personnel shortage while that officer could be detailed to another billet is not possible.

The second case is that of an available billet but no available personnel asset. Three outcomes are possible.

First, the billet is permanently and intentionally left vacant. This will be discussed under BILLET CONSTRAINTS.

Second, the billet may be left vacant until an URL FM personnel asset becomes available. The billet's priority
will affect exactly when the billet is filled as well as the
desire of the commander to whom the billet belongs. This will
be discussed as a separate constraint.

Finally, the billet may be filled with an available personnel asset other than an URL - FM asset. This could range from a FM asset from a staff corps to an URL asset with no subspecialty whatsoever. Each assignment would have to be reviewed in order to determine if the officer assigned to a billet adequately filled the billet. One corollary to this are billets which have dual subspecialty requirements -- one billet, two subspecialties -- calling for an officer of a unique combination of talents. The billet may be filled with an officer possessing only one of the two codes.

The following PERS 402 billet data is presented from the October data. The PERS 402 billet data (as differing from the OP-01CE billet data) reflects 95 vice 100 P, Q, S, R billets. The PERS 402 data was dated 11 October versus the OP-01CE data which was dated 31 October. No reason for the discrepancy save time difference was found. The difference is five P-coded billets. Using the PERS 402 data, 13 billets were vacant (three P, eight Q, one S, one R), nine were filled from other than URL assets (six P, two Q, one S -- of which four P are FM's, one P is a material management subspecialist, one P has no subspecialty; one Q is a FM, one Q has no subspecialty; one S is a FM) and 22 were filled with URL assets

without a FM subspecialty (eight P, five Q, seven S, two R -of which seven P have a subspecialty, one P has no subspecialty; three Q have a subspecialty, two Q have no subspecialty;
four S have a subspecialty, three S have no subspecialty;
two R have a subspecialty) and 51 P, Q, S, R were filled by
URL - FM assets.

6. URL - FM Billet Characteristics

These were described in Chapter I and will be only briefly amplified. The billet characteristics establish the basis for establishing adequacy.

None of the three characteristics (designator, rank, subspecialty code with suffix) appears sacrosanct. Of the 95 billets discussed earlier, nine were filled with other than URL assets. Several others are filled with the incorrect designators (e.g., a 1300 billet is filled with a 1110 officer). Rarely are officers assigned to billets calling for more junior ranks as difficulties regarding seniority may It is not uncommon, however, to find an officer more junior than the billet that officer occupies as the problem of seniority is less likely to occur. The subspecialty with suffix is also not sacred but leads to a particularly perplexing question. If it is necessary to code a billet to a finite subspecialty suffix, will any officer not possessing the identical suffix be able to carry out the duties of the billet? If the answer is yes, are billet suffixes necessary? As an example, of 19 Q-coded billets filled with URL - FMS,

nine are filled with Q-coded officers. The remainder are three P, two S, four R, and one C. Are these other ten billets adequately filled?

7. URL - FM Officer Characteristics

This constraint is comprised of several elements and, while data is not available to support their impact, examples will be used to demonstrate them.

Rank was mentioned earlier and to some degree restricts the use of the URL - FM assets. If a Lieutenant-Commander URL - FM billet was open and only an URL - FM Captain was available, it is highly probable that despite the high priority of the billet, the Captain would be detailed to another billet for which a Captain was required.

The officer's designator could impact on assignment but, despite a designator portion to a billet description, this characteristic does not appear to inhibit assignment greatly.

An officer's sex impacts greatly on assignment.

Female officers are not available for assignment to sea duty.

The impact is felt where an URL - FM male asset must be sent to sea rather than to an URL - FM tour while a female officer without a FM subspecialty is available.

Officers are not restricted to having one subspecialty and many possess two or three. It is entirely conceivable (and in fact true) that an URL - FM personnel asset may also be an asset to another subspecialty community. If that

officer is detailed into a billet requiring another subspecialty which that officer possesses, impact is felt on available URL - FM personnel assets. Several instances were found where this phenomenon was exhibited.

The URL community has several selection boards which review officers' records to determine those qualified for such things as Executive Officer (XO) billets in the rank of Lieutenant-Commander. Thus, an URL - FM officer who successfully screens for XO may be sent to sea whereas another URL officer who does not successfully screen for XO may be available for assignment to an URL - FM billet for which that officer is not qualified.

Marital status can impact in one of two ways. Given that a husband and wife are both Naval officers possessing FM subspecialties, one or both may have to forego assignment to a FM billet in order to be assigned to billets in the same area.

The second way marital status impacts is as one of virtually any conceivable number of things that can be translated as personal desires of the URL - FM officer. This broad-based element may restrict the assignment of the officer and thus affect the quantity of URL - FM assets actually available for assignment to URL - FM billets. Another of these personal desires may be the need on the part of an officer to have facilities available for a handicapped dependent.

8. Command Desires

This constraint deals with the ability of a commander to select the members of his/her staff. To whatever degree this is possible, it can impact on the assignment or non-assignment of an URL - FM officer to an URL - FM billet.

Assessment of this constraint based on data is not yet possible.

9. Promotion/Performance Potential

This is a constraint that impacts in two ways. It may impact on the officer responsible for detailing or placing officers into billets. What occurs is a subjective evaluation of a billet as to its requirement for an officer of demonstrated documented superlative performance (versus an officer of less than demonstrated superlative performance). If the URL - FM billet is perceived as not 'good' for an URL - FM officer despite that officer's qualifications, the officer may not be detailed to the billet.

The other effect is on the URL - FM officer being detailed who also has an opinion of both him/herself and of any given billet. An officer may actively pursue a non-FM billet perceived as career enhancing in lieu of an URL - FM billet which, to that officer, is not career enhancing.

B. BILLET CONSTRAINTS

Discussion of the impact of the constraints on the denominator of the equation will now be presented.

1. Total Billet Strength of the Navy

It has previously been stated that total billets presently exceed total available personnel assets. The obvious conclusion that some billets must be vacant at any time must be recognized and incorporated into the equation to the degree that URL - FM billets are affected. To presume that there is no effect is incorrect as was evidenced by 44 P, Q, S, R billets (URL - FM, CAPT, CDR, LCDR) not filled with qualified personnel in May and 13 billets listed as vacant in October coupled with nine billets filled with other than URL assets and 22 billets filled with URL officers without FM subspecialties for a total of 44 billets. Exactly how many of these shortfalls is directly attributable to the overall billet excess is unknown. It is necessary, however, to adjust the denominator to account for intentional vacancies to allow accurate measurement.

To create an URL - FM billet does not necessarily require creation of a new billet. An existing billet may be modified by the addition of the requirement that an incumbent possess a FM subspecialty. Presuming that total billets did exactly equal total personnel assets, the URL - FM billets could vacillate over time (as does occur) altering the denominator correspondingly.

2. Total Authorized Personnel Ceiling

The only way this constraint would impact is if total billets were less than total personnel causing new billets to be created in order for personnel to have jobs. Among these new billets might well be URL - FM billets thus affecting the equation denominator. The liklihood of this occurrence is extremely remote.

3. Total URL - FM Billet Strength

This is the starting point of the denominator. Fluctuation in this constraint is possible as commanders determine changing need and request change to their staff composition. As was pointed out, the billet quantity and composition impacts on asset quantity. However, at any given level of URL - FM assets, a change in URL - FM billets can make it more or less difficult to adequately fill the URL - FM billets even when the total billets remain constant. The causes for the present downward shift in URL - FM billets are many and varied yet in addition to affecting input will affect the equation.

Department of the Navy, Office of the Chief of Naval Operations, OPNAV INSTRUCTION 1211.6E (with change 1), Enclosure (2), 10 April 1975.

4. Total URL - FM Personnel Assets

This constraint does not cause vacillation in the denominator but vacillation in the URL - FM billet strength can and does lead to change in this constraint.

5. Timing

The impact of timing was basically discussed under PERSONNEL CONSTRAINTS. One aspect, deferred to here, was that of billets intentionally left vacant. If, because of prioritization, some URL - FM billets are intentionally left vacant, it would seem rational to subtract that quantity from the total. If some billets are intentionally left vacant while a qualified officer is sought, an adjustment should also be made to the denominator. In short, some form of reality must be introduced into the equation.

6. URL - FM Billet Characteristics

For purposes of the denominator, the billet characteristics determine whether or not the billet is URL - FM.

If it were desireable to alter the composition of the URL - FM billets under consideration, the characteristics of the billets could be used to subdivide the community.

7. URL - FM Officer Characteristics

This constraint impacts in one notable way. Each subspecialty suffix has a definition and characteristics

associated with it. When a commander seeks to have a billet coded for a subspecialist, the commander seeks a billet code that (hopefully) will insure the billet is filled with an officer with the desired characteristics. In this way, a commander, via the chain of command, determines, for instance, whether a P-coded or S-coded billet is required. Thus is the make-up of the totality of URL - FM billets determined. Comparing the May data and the OP-OICE data reveals the following information.

Billets

Rank	P		Q		S		R		TOTAL	
	May	Dec	May	Dec	May	Dec	May	Dec	May	Dec
CAPT	13	11	21	19	2	4	3	2	39	36
CDR	23	17	15	14	7	5	1	0	46	36
LCDR	18	17	0	1	7	7	1	1	26	26
LT	0	1	0	0	2	1	0	0	2	2
		_								
TOTAL	54	46	36	34	18	17	5	3	113	100

The trend appears to be toward overall reduction.

8. <u>Command Desires</u>

Command desires, as translated into perceived requirements for URL - FM personnel, is the basis for the requirement expressed as URL - FM billets. As command perceptions change (including perceptions by the authorities who approve such billets), the quantity and composition of URL - FM billets will change. This obviously impacts on URL - FM billets.

9. Performance/Promotion Potential

This constraint is not seen as affecting the denominator except in one way. If a billet is perceived as not career-enhancing (i.e., the previous four incumbents have failed to be promoted -- regardless of other factors) the billet may be intentionally left vacant until an officer whose record 'can't' be hurt or one with already limited promotion potential is available.

This chapter has sought to present and explore several of the constraints that must be accounted for in attempting to measure utilization. While some may not be quantifiable despite maximum effort, their probable effects must be incorporated or in some way accounted for.

III. CONCLUSIONS AND RECOMMENDATIONS

It would be convenient to be able to neatly measure the impact of all the constraints and arrive at an answer. This is not possible.

Presuming there is and will continue to be a need to measure or quantify how well the Navy is using it URL - FM personnel assets, it behooves the Navy to develop and maintain a system through which accurate, meaningful and hopefully unbiased data can be collected and retained. This data can then be used to assess and defend the utilization. It would prevent conclusions (without inclusion of and accounting for the constraints that can impact heavily on the utilization), such as were made in a report dated 20 June 1977, that underutilization was evident at the levels of Captain, Commander and Lieutenant-Commander. 12

A. TOTAL BILLETS/PERSONNEL

1. Conclusions

These two constraints are the products of the Navy's ability to express the missions assigned to it in terms of

¹² Chief of Naval Operations (OP-92SA), Letter: Serial 92SA/87731 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, p. 4, 20 June 1977.

personnel requirements and the Navy's ability to create and support the personnel assets as constrained by the government.

If the Navy has expressed its billet requirements as accurately as possible, an 'if' which may be open to heated debate, the failure to provide the personnel assets cannot help but impact adversely. The reality of gapped billets, whether permanent or temporary on some form of rotating basis, must impact on the commands forced to absorb these vacancies. At a constant workload, other personnel may have to work longer hours to compensate for the vacant billet(s). If the vacancies include subspecialists, inefficiences can be introduced as unqualified personnel attempt to do a job requiring skills not possessed. Further inefficiencies may be introduced as personnel do their own jobs, the tasks assigned to the vacant billet, and learn the skills or acquire the education and experience of the vacant billet. A domino effect resulting in degraded performance all around may result.

The alternative to asking too few to do too much is to acknowledge that a vacancy will reduce or eliminate a command's ability to perform a mission or missions. While this approach is distasteful, it may allow the introduction of reality into attitudes which might otherwise ignore it.

2. Recommendations

Prioritization, either on a rigid scale or on a system encompassing objective and subjective evaluation, is not realistic due to its downstream impact. Thus it is recommended that the Navy evaluate its total billets in light of its personnel resources. It is further recommended that the Navy be candid and forthright about what can and cannot de done with the existing personnel resources without figuratively exhausting the personnel resource prematurely. To do this would eliminate or at least minimize the effects of these constraints on URL - FM utilization by reducing conflict in URL - FM officer assignment to URL - FM billets based on prioritization.

B. TOTAL URL - FM BILLETS/PERSONNEL

1. Conclusions

Billets, or the FM subspecialty requirements associated with billets, should be reviewed periodically and adjusted to reflect changes in command missions, command organizations, and advances in technology. If, indeed, an URL - FM officer is not needed, that billet (or the subspecialty code associated with it if an officer possessing different characteristics is required) should be eliminated forthwith. Performing this necessary procedure will permit financial resources to be put to other uses training personnel in other needed skills.

The versatility of URL - FM personnel is one of their greatest assets. The versatility becomes a liability when one part of the asset is needed more than the other yet measurement of the less needed facet ignores the impact of the greater need. Of the 147 URL - FM officers holding P-codes, 64 were found in operational/sea tours, educational tours, or in tours requiring another subspecialty code which the officer possessed. Q-coded personnel reflected 14 of 72, S-coded 11 of 54, and R-coded five of 21 likewise employed. No conclusion regarding the cause or effect nature of this use of URL - FM personnel assets can be made as the data and documented thought processes regarding each officer's assignment do not exist.

2. Recommendations

It is recommended that URL - FM billets be created, changed, or deleted based only on command creation/consolidation/reorganization or technological change. Eliminated should be any real or perceived change due solely to a personal preference. This will enable tighter control over the URL - FM billets strength with less fluctuation (and less vacillation in officer input into educational programs). It is also recommended that some absolute means be created to enable determination of whether or not the Navy (and ultimately the general public) is getting a return on the educational investment made in URL - FMSs. How many tours in URL - FM billets constitute an adequate return? Should the URL - FM

officer be confined to URL - FM billets when ashore? These are hard decisions, but decisions which must be made.

C. TIMING

1. Conclusions

Timing can and does play a vital role in determining to what billet an officer will be assigned. Several realities must be recognized. First, an URL officer must successfully complete the required operational sea tours in order to remain competitive for promotion. An URL officer who ignores this fact of life stands a poor chance of promotion. What it does not mean is that each time an URL - FM officer becomes available for detailing to a billet, sea duty must be the first consideration. Thus the ability to place URL - FM officers in URL - FM billets should improve once the operational tour requirement at each rank is completed as that consideration can be bypassed.

If the assignment of URL - FM officers to URL - FM billets is important enough to warrant the extra effort entailed, adjusting the rotation dates of the officers involved could enable qualified officers to be rotated into billets as those officers become available. In discussions with officers whose job it is or was to insure qualified officers are assigned to billets, it became intuitively obvious that those officers indeed strive to do exactly that within the

constraints under which they must operate. The problem is then to limit their constraints.

2. Recommendations

Adjust timing as necessary to ensure qualified reliefs are ordered into billets that are becoming vacant. The domino effect of filling billets must be incorporated into this process as it too is a reality of shifting personnel form job to job. Decisions should also be made as to the importance (or lack thereof) of keeping URL - FM officers in URL - FM billets when ashore. To reduce the number and type of shore billets an URL - FM officer can expect to occupy might reduce the number of officers willing to acquire the subspecialty but also might well mean that the officers possessing the FM subspecialty would actively seek FM billets. The result could be a more experienced URL - FM officer community which would provide better performance.

D. URL - FM BILLET/OFFICER CHARACTERISTICS

1. Conclusions

The characteristics detail most of the qualities which should be known. The subjective qualities, however, should be either more objectively quantified or eliminated.

The discussion of adequacy in terms of the FM subspecialty characteristic should be detailed. It is patently obvious that a Q-coded officer adequately fills a P-coded

billet as the P-code in a prerequisite to acquiring a Q-code.

Does, however, an S-coded officer adequately fill a P-coded billet or vice versa? How, also, can it be determined if a P-coded or S-coded URL - FM officer has served in a URL - FM billet short of researching each officer's assignment history - presuming that knowing this information is impartant and that the officer has not had a subspecialty suffix code change to a Q- or R-code? How can it be assured that any of the proven subspecialist code suffixes are assigned on the basis of exhibited prowess as a financial manager uninfluenced by irrelevant factors such as performance in sea tours or perceived promotion potential?

2. Recommendations

It is recommended that a suffix code hierarchy be created for determination of adequacy in meeting the FM requirement of a billet. This would not preclude assignment of a suffix coded officer to a billet with a higher coded requirement if that URL - FM personnel asset was all that was available.

It is likewise recommended that a data element be created to reflect how often the assignment of each URL - FM personnel asset to a URL - FM billet is made. This could be further subdivided by rank if desired.

The URL community is presently the only community that uses the proven subspecialist suffix codes. The general criteria for identification as a proven subspecialist is

contained in OPNAV Instruction 1211.6E and includes evaluation of other than performance in FM subspecialist billets. It is therefore recommended that only performance (or lack thereof) in billets requiring use of the FM subspecialty be evaluated and then only to determine an officer's performance as a FM subspecialist. The objective of selecting officers as proven subspecialties should be the identification of the best financial managers and not the award of a code for any other reason. Promotion potential and performance in other than FM billets is therefore irrelevant. Specific criteria for the downgrading of proven subspecialists to subspecialists should also be created to enable the URL - FM officers to determine what they must do to retain their identification as proven subspecialists.

E. COMMAND DESIRES

1. Conclusions

It is political and practical naivete to believe that commanders, especially more senior commanders, will not exercise control to whatever degree possible in insuring that their staffs are comprised of the best available personnel. It is entirely reasonable that a management organization will seek to employ the very best personnel available. Within the private sector, the competition is intense and the inducements can include salary, hours, expense accounts, and stock options. On an intra-organization basis, the competition for 'inside'

personnel is more often based on putting available talent where it is needed or on a power struggle. Again, in the private sector, it is still possible to bring in personnel from outside the organization.

The Navy, however, has virtually no ability to vie for personnel resources from the private sector -- presuming an URL - FM officer is required. Thus, the field of choice is immediately reduced. Further reduction of the field of choice is apparent as not all URL - FMs are available at any one time. If more than one commander is vying for an available URL - FM asset, the commander able to bring more pressure to bear may acquire the asset whereas another commander may have a more urgent need for the asset. A commander may also be in a position to accept or reject an officer based on a subjective review of other than the officer's qualifications for the billet (e.g., rank, designator, subspecialty code with suffix) or request an officer who does not possess the requirements of the URL - FM billet thereby perhaps causing an URL -FM personnel asset to be used in a non-URL - FM billet while simultaneously leaving an URL - FM billet inadequately filled.

2. Recommendations

If it is necessary to furnish a group of qualified personnel to be selected from, only relevant qualifications should be provided (e.g., rank, designator, and subspecialty code with suffix). If there are other qualifications required of the incumbent officer, those qualifications should

be included in any and all billet descriptions. For example, if the billet also requires an officer who has previously held command, that should be detailed in the billet description. If the billet requires an attribute that can only be qualitatively judged, that need should also be documented. Additionally, if an officer possessing the qualifications needed for a billet is not accepted by a commander, that rejection should be documented with explicit detail as to the cause for rejection. In this way, data could be accumulated to define the impact of this constraint.

F. PROMOTION/PERFORMANCE POTENTIAL

1. Conclusions

Dealing with the perceptions of individuals is difficult at best -- and then when done by professionals. Perceptions may be based on fact, fiction or some of both. What is important is to change the perception if the perception isn't true or, when the cause of an incorrect perception is known, eliminate the cause.

2. Recommendations

If there is a need for an officer performing a detailing or placing function at the Bureau of Naval Personnel to perform a subjective evaluation of an officer, then document the need to enable the officer being detailed to know what attributes a billet requires as well as the officers

performing the detailing and/or placement functions. If, on the other hand, this subjective decision making can be eliminated, then the information concerning the characteristics of a candidate for a billet should be limited to those needed to determine if the officer meets the documented billet requirements.

In summary, the recommendations made would enable control over the impact of the constraints and better documentation of whatever impact exists. The ability to express these constraints when discussing the utilization of URL - FM personnel assets will make the discussion more realistic and meaningful.

BIBLIOGRAPHY

- Lee, L.M., Policies Concerning the Education and Assignment of the Unrestricted Line Officer: Trauma, Turbulence and Tenacity, research paper, Washington University, Seattle, May 1972.
- U.S. Congress, Senate, Promotion of Economy and Efficiency Through Establishment of Uniform Budgetary and Fiscal Procedures and Organizations., Title IV, Public Law 216, 81st Congress, 1949.
- Financial Management in the Navy, NAVEDTRA 10792-D, Naval Education and Training Support Command, 1974.
- Hickman, D.E., Officer Education for Navy Financial Managers, M.B.A. Thesis, George Washington University, 1972.
- Chief of Naval Operations (OP-92SA), Letter Serial 92SA/87731 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, 20 June 1977.
- Department of the Navy, Office of the Chief of Naval Operations, OPNAV INSTRUCTION 1211.6E (with change 1), dated 10 April 1975.
- Office of the Chief of Naval Operations Memorandum A/S #156-75: Serial 090X/83X2 to Chief of Naval Personnel, Subject: Redistribution of Financial Management Billets, 29 March 1977.
- Director, Naval Education and Training (OP-099) Letter Serial 992/144550 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, 28 October 1977.
- Deputy Chief of Naval Operations (Manpower) (OP-01) Letter Serial 01CE2/196912 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, 13 October 1977.
- Chief of Naval Personnel Letter Pers-403c-erp: Serial 3738 to Chief of Naval Operations, Subject: Financial Management Subspecialty Review; report of, 3 October 1977.
- Commander Naval Facilities Engineering Command Letter 09M11 to Chief of Naval Operations (OP-92), Subject: Financial Management Subspecialty Review Report (Draft), 11 July 1977.
- Naval Supply Systems Command Memorandum OP31/DAT for CNO (OP-92), Subject: Financial Management Subspecialty Review Report, 7 July 1977.

- Senior Member of the Selection Board for Operations Analysis Subspecialty Letter Serial 96/59691 to Chief of Naval Personnel, Subject: Report of Board, 9 July 1975.
- Senior Member, Selection Board for Financial Management Subspecialists Letter Pers-NEOCS: rem: Serial 116/74 to Chief of Naval Personnel, Subject: Report of the Board; FY74, 26 April 1974.
- Chief of Naval Personnel Letter PERS-474b-dlk: Serial 261-36-0448/1310 to Captain Hugh T. SMITH, USN Bureau of Naval Personnel, Subject: Advanced Education Program Selection Board, 17 September 1977.
- Bureau of Naval Personnel PERS 402 Memorandum Pers-402-erp: Serial Memo 198 to All AOC's Subject: Subspecialty utilization codes, undated.

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