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By Bengt Schager

In the current climate of decreasing numbers of applicants for sea careers, it is more important than ever to get the right person for the job. To this end, companies are increasingly making use of psychological assessments when choosing applicants.

This paper presents a followed-up study on the outcome of pre-employment selection of maritime officers using this method carried out for Star Cruises from April 1996 to the end of 2000. During this period, 459 deck officers and engineers were assessed.

The shipowner

Star Cruises is a major operator in the cruise industry with a growing fleet. During the period of this study, the fleet varied from 9 to 12 vessels ranging in size from 3,000 to 76,000 gross register tons with capacities from 200 up to 4,400 passengers and crew. The ships operate in South East Asia, with cruising periods from two days to a week, in some of the most congested waters in the world and in a tropical environment.

In the mid 90's it was decided that all seagoing officers should be psychologically assessed and rigorously selected prior to employment. The objective was to enhance safety, to minimise the impact of human-factor mistakes and to foster a world-class operation of their ships.

Besides assessment and selection, other means for enhancing safety were also implemented (*Gronberg & Sorenssen, 2000*), (*Gronberg, 2001 b*), including:

- Strict and unconditional rules of professional conduct and behaviour;
- An absolute non-alcohol policy;
- New and enhanced operating procedures such as a pilot/co-pilot system, "closed-loop" communication and "red-zone operation" in confined waters where control rooms and bridges are closed and communication is restricted to what is professionally required;
- Surveillance cameras on the ships' bridges as well as in the engine rooms to recapitulate and learn from events;
- Voyage Data Recording of traffic situations, radio communication, radar screens etc, enabling the officers to analyse various traffic situations and manoeuvres - their own as well as other's;
- Continuous modernisation of engine room and bridge equipment up to the best standards available;
- Training of deck officers in a modern in-house bridge simulator;
- A performance appraisal system for continuous assessment of officers;
- Various means to retain personnel such as a 1/1 duty system (i.e. with 10 weeks on and 10 weeks off), fair rewarding system and possibilities for promotion as well as a generous budget for professional training.

The shipowner's strategy to enhance safe ship operation, as regards officers, runs along the following lines:

1. To attract and employ the best officers;
2. To continuously train them;
3. To provide guidelines and operating procedures;
4. To provide a vigilant management follow-up;
5. To implement means for retaining and further developing officers.

To accomplish this, it was felt that a rigorous assessment and selection procedure ▶

■ Psychological assessment works!

Participants in this psychological pre-employment assessment of maritime officers were followed up for five and a half years after employment. The officers were employed between April 1996 and the end of 2000. Four hundred and fifty-nine officers (deck officers and engineers) of 5 nationalities have been assessed against defined "Desired Standards" criteria. The Desired Standards are clarified as well as the psychological assessment methodology. Three hundred and seventy six officers (81.9%) passed the selection criteria and 351 of these were eventually employed.

The study reveals that the assessment methodology successfully identified 349 officers (99.4%) who in real life met the safety criteria in the Desired Standards. The methodology was not successful in two cases (0.6%).

The conclusion is that the pre-employment psychological assessment was shown to be almost totally accurate in discriminating between suitable and unsuitable applicants for officer positions. It is also suggested that psychological assessment constitutes an efficient tool in enhancing safety and in counteracting human-factor-induced errors in the maritime field, as is the case in other fields. Other, secondary, gains from psychological assessment are also discussed. ■

◀ prior to employment constituted the necessary grounds for the rest of their efforts. In spite of all the sophisticated technological aids, the human being was viewed as the central and most important component in the safety system. Above all, human-factor problems should be addressed.

Desired standards

In 1996, representatives of Star Cruises together with maritime psychologists at Marine Profile produced a document entitled "Desired Standards". Desired Standards is a list of capabilities that were considered either mandatory or favourable for employment as officers on board the owner's ships. The desired standards were composed in accordance with the shipowner's desires but limited to capabilities that could be assessed by psychological tests and interview.

The Desired Standards document consists of eight main headings or areas of assessment. Each main heading is divided into sub-headings, entities that are defined in a psychological language. The headings for senior officers are shown in **Table 1**. The main headings also apply to junior officers but with some differences in the sub-headings. Leadership and Management are, for example, not emphasised for juniors. Maturity, as well as some other capabilities, are related to age and the criteria are therefore different for senior and junior officers.

The requirements under the first heading, "Safety Aspects", are absolute. Applicants who meet these criteria are reported to the personnel officer at Star Cruises and their assessments for each main heading are thoroughly discussed. Pros and cons are evaluated to help the personnel officer make the decision on employment. In these cases the maritime psychologist functions as an advisor and discussion partner. Applicants who fail to meet Safety Aspect capabilities will, however, be rejected without extensive reporting. The shipowner has given the maritime psychologists the responsibility to make these decisions.

Assessment methodology

The total assessment process is conducted in a series of steps. Each subsequent step involves deeper assessment and more investment in time, professionalism and money. To reach the next step in the assessment process, the applicant has to pass the previous one.

The first three steps are conducted by personnel officers at Star Cruises and involve assessment of information from applications and references. Selected applicants are then invited for a personal meeting. If this preliminary interview is favourable, the applicant is further assessed by using the Masterline Marine test method (see next page).

Main Headings	Capabilities involved
Safety Aspects	Reality testing, perceptual accuracy, personality organisation, stress resistance, sense of responsibility, maturity and judgement.
Personality	Flexibility, self-control, self-reliance, ethics, attitudes and personal standards.
Intellectual Capacity	Level and nature of intelligence, rationality, logical skills and reasoning.
Communicative Skills	Verbal clarity, willingness to communicate, ability to listen and to read people, willingness in sharing experiences and in guiding others
Drive and Activity	Commitment to the work, engagement, motivation
Social Skills	Ability to make and maintain contact with others, openness, interest in others
Leadership and Management	Diplomacy and tact, firmness, ability to plan, delegate, evaluate and follow up, ability to motivate and assist others, sociability and loyalty.
Potential for Development	Growth potential and receptivity.

Table 1. *The main headings of the Desired Standards and brief explanations of the capabilities.*

If the assessment steps at Star Cruises are also favourable, the applicant is referred to Marine Profile. The applicant is informed by the personnel officer about the role of Marine Profile and how the assessment is conducted.

At Marine Profile, maritime psychologists assess all applicants individually. Each assessment takes around six hours and is completed during one day. The day starts with a fact-finding interview, after which the applicant is informed about the structure and the content of the day as well as about ethical considerations, confidentiality and how information is treated and stored. After this initial stage, a number of psychological tests are administered. Information gained from these tests will guide the psychologist and help to find facts and understand more about the applicant's personality.

After analysing the test information, the psychologist meets the applicant for a second lengthy in-depth interview. During this interview, the psychologist strives to challenge and verify the information gained from tests. Information obtained from the interview is compiled with the test data to form a reliable and balanced picture of the applicant. The test information is also used as a means to find out more, or as a "navigational aid" in understanding important facets of the applicant's personality.

Finally the applicant is informed of the outcome of the assessment and whether he/she has met the Safety Aspect part or not. This feedback is conducted in a discussion-like manner and, irrespective of the result, with sensitivity towards the individual. The psychologist's approach aims at supporting the applicant's further development and to advise him/her about traits to strengthen, to be satisfied with, or to be aware of. The applicant finally gets feedback on the information which will be conveyed to the personnel officer at Star Cruises for his or her decision.

The tests

A detailed description of each test is beyond the scope of this paper. For more data about the tests, please see the list of references. Below are short descriptions of the more frequently used test methods.

The Defence Mechanism Test (DMT) is used to gain information about an individual's personality and personal development, strategy for coping, stress resistance and perceptual accuracy. DMT has been used for selection purposes as well as for diagnostic purposes and research since the fifties (*Kragh, 1955*). The Defence Mechanism ▶

◀ Test also constitutes the main technique in the selection of aviation pilots (*Neuman, 1978*), air-traffic controllers, managers, special police officers and bodyguards.

Masterline Marine is an adaptation for maritime use of a test also called "The Wheel" or "SPORQ" (*Shalit, 1978*). Versions of this test have been used since the seventies among military personnel (*Shalit, 1983*) and for selection purposes in industry. Masterline Marine provides information about an individual's coping potential, priorities, attitudes, cognitive structure, and capability for involvement and motivation. (In the beginning of 1999, personnel officers at Star Cruises were trained to use Masterline Marine in their preselection prior to transferring applicants to Marine Profile. Before 1999 Masterline Marine was administered by Marine Profile during the final assessment day.)

ATS Simultaneous Capacity Test (*Bratfisch & Hagman, 1991*) measures an individual's performance in perceptual swiftness, endurance, precision, discrimination and vigilance as well as the degree of disturbance from simultaneous multitask performance involving most mental abilities. ATS is used for selection purposes in many areas where measurement of capacity for simultaneous task performance is essential.

D2 Test of Attention measures the level of selective attention as well as processing speed, concentration and rule compliance. D2 is used for measuring driving efficiency as well as for selection purposes in many areas. (*Brickenkamp & Zillmer, 1998*).

The applicants

From April 1996 until the end of 2000, a total number of 459 applicants, all male, were assessed using the methodology described above and against the criteria set up in the "Desired Standards".

The applicants represented five nationalities, although the majority could speak and understand at least one of the Scandinavian languages in addition to English. Most interviews were conducted in a Scandinavian language and a few in English. In written tests, any of these languages could be used, according to each applicant's preference (see **Table 2**). A majority of the applicants were Swedish and many were also Finnish, mostly from the Swedish-speaking island of Åland.

The age distribution of applicants is also of interest, particularly because the "Desired Standards" contain capabilities that may vary depending on age. Perceptual accuracy, maturity, drive and activity are examples of such capabilities (see **Table 3**). Senior positions are Master (Captain), Staff Captain and Chief Officer in the deck department and Chief Engineer, Staff Engineer and First Engineer in the technical department. Other subordinate officer positions in the respective departments are called junior.

Nationality	Number	Percentage
Swedish	366	79.7
Finnish	65	14.0
Norwegian	24	5.2
Danish	3	n/a
Polish	1	n/a
Total	*459*	

***Table 2**. Distribution of nationalities in the study.*

Category	No. of assessed Applicants	Age range	Average age
Deck officers, senior	75	26-57	40
Deck officers, junior	180	22-43	29
Engineers, senior	81	26-5	41
Engineers, junior	123	22-56	33
Total	*459*		

***Table 3**. Number and categories of assessed applicants, age ranges and average ages.*

Category	Total		Approved		Not approved	
	Number	%	Number	%	Number	%
Deck officers						
Seniors	75	16.3	61	81.3	14	18.7
Juniors	180	39.2	143	79.4	37	20.6
Total	*255*	*55.5*	*204*	*80*	*51*	*20*
Engineers						
Seniors	81	17.6	71	87.7	10	12.3
Juniors	123	26.8	101	82.1	22	17.9
Total	*204*	*44.4*	*172*	*84.3*	*32*	*15.7*

***Table 4:** Distribution of approval and non-approval for deck officers and engineers, juniors and seniors.*

Nationality	Total	Approved		Not approved	
	Number	Number	%	Number	%
Swedish	366	296	80.9	70	19.1
Finnish	65	61	93.8	4	6.2
Norwegian	24	17	70.8	7	29.2
Danish	3	1	n/a	2	n/a
Polish	1	1	n/a	0	n/a

***Table 5**. Distribution of approval and non-approval for different nationalities.*

Outcome of the assessment process

Of the total 459 applicants, 376 ▶

◀ applicants (81.9%) met the Desired Standards whereas 83 applicants (18.1%) failed. The majority of these cases failed due to not meeting the Safety Aspects. None of these 83 applicants were consequently offered employment.

An overall percentage of around 80 for passing the Safety Aspects in the final assessment step was presumed according to empirically based expectations. The material shows that 81.9% of the applicants in reality met the aspects, which was thus in line with expectations. The distribution and percentages of approval and non-approval in the main two categories, deck officers and engineers, with subcategories senior and junior, are shown in **Table 4** (previous page).

The risk of cultural bias when assessing individuals from different nationalities is of course a major concern. Ethnic background, language, traditions, culture etc. naturally play a part in individual development and in how an individual behaves and expresses him/herself. Although the Nordic countries have much in common and share many values and traditions, significant cultural variation is still observable. The assessed officers, divided into nationalities, are shown in **Table 5** (previous page). The maritime psychologists, being Swedish, could perhaps imply a cultural bias in favour of Swedes. The test methods used could equally well be suspected to bear in them a cultural bias.

The figures in Table 5 show a variation in the percentage of approved applicants for Swedish, Finnish and Norwegians. A higher proportion of the Finnish applicants met the Desired Standards compared to Swedes, whereas the Norwegians showed a lower percentage of approvals. Their total number is, however, relatively small and the deviation might therefore been random. There is no reasonable explanation, except chance, for why Finnish applicants scored better than the other nationalities. Suspicions of a systematic cultural bias, however, cannot be justified on the basis of deviations in the results between Swedish, Finnish and Norwegian applicants.

The distribution of approved and non-approved applicants according to age is presented in **Table 6**. The relatively low proportion of approvals for applicants 51-60 years of age, only 66.7%, needs some comment. The total number of applicants in this range (18) is quite limited and chance could therefore play a greater role in the result. The apparent bias could, however, also depend on special circumstances among officers looking for new job opportunities after the age of fifty. There is, furthermore, a possibility of variation in such a group where psychological or "mental age" sometimes differs from actual biological age; some are quite young and healthy above 50 while others may suffer from some deterioration of alertness and vigour. A somewhat higher percentage of non-approvals seem therefore reasonable to expect in this age group.

Age intervals	Total Number	Approved Number	Approved %	Not approved Number	Not approved %
21-30	199	159	79.8	40	20.2
31-41	159	138	86.7	21	13.3
41-50	83	67	80.7	16	19.3
51-60*	18	12	66.7	6	33.3

*The oldest applicants were 57 years of age.

***Table 6**. Distribution of approved and non-approved applicants according to age.*

Normal measures have been taken to assure correct test data. Visual tests are adjusted to compensate for reduction in some capabilities due to age, e.g. visual acuity and reaction time. Other standardised tests compare an individual's performance with the average performance of individuals of the same sex and age. Normally, however, there is a general difference in performance between younger and older individuals. The Desired Standards criteria are not adjusted according to age, only for senior and junior positions, and are based exclusively on a desired safety level and professional demands.

Of the 376 who passed, 351 applicants were eventually employed. Of the 25 who were not employed, a few did not accept the terms of employment offered, others declined for personal or other reasons. An unknown number were not offered a position within a reasonable time because of changes in the fleet and a consequent change in the need for new officers. The 351 employed officers (55 senior and 138 junior deck officers and 62 senior and 96 junior engineers) have been followed up as regards their performance in the respective job situations.

The focus of interest has been on the officers who passed the pre-employment assessment but in reality failed to meet the Desired Standards, i.e. officers whose employment had been terminated or whose contracts the company declined to prolong. Efforts have been made to collect information about these officers in order to shed light upon their behaviour and the underlying causes for their termination. It has been particularly important to analyse cases where personal traits, individual capabilities or similar "psychological" causes played the major role.

Information about these officers and their performance has been collected from personnel officers at Star Cruises and from ship operations managers. The failed officers' superiors, Masters and Chief Engineers, have also been encouraged to provide additional and more detailed information.

During the five-and-a-half-year follow-up time, from April 1996 until 2001, 60 officers left their employment, according to the shipowner. The majority, 45 officers, left due to other job opportunities, family or private reasons. Seven officers were either terminated or their contracts were not renewed by the company because of failure to adhere to company policies. A few of these were violating the strict rule concerning alcohol and some violated other important rules. These seven officers crossed important lines in their behaviour, but it is deemed that in most other respects they performed well and that their failure was not a result of any inappropriate personality characteristics.

Another eight officers were terminated or their contracts not prolonged because of inappropriate performance. In these cases, their individual personality characteristics are judged to have played a part. This justifies a somewhat deeper analysis of the circumstances that preceded their termination.

The officers in question are presented below with brief details about their on board performance as stated by the company. This is followed by a short abstract from their pre-employment psychological assessment, sometimes with quotations derived from the psychologist's own notes.

Analysis of reasons for contract terminations

Officer A

Officer A, a junior deck officer in his ▶

◀ thirties, was after quite a short time on board sent ashore after an intensive argument with the captain.

Abstract from officer A's psychological assessment: Officer A complied fully with the Safety Aspects. However, the psychologist found him "headstrong and opinionated", and with a tendency to be arrogant, easily provoked and irritated.

Officer B

Officer B, in his fifties, was a former Captain on board merchant ships and now employed in a Chief Officer's position. He was terminated after one working period. Officer B was found to be lazy and unmotivated with a "laid-back" management style. He did not take the necessary initiatives, he performed his work in an unclear manner and he was neither interested in his job nor willing to learn new things. Officer B had problems with other nationalities and showed some signs of racial prejudice.

Abstract from officer B's psychological assessment: Officer B fully met the Safety Aspects. He was found to be responsible and calm with swift and accurate perception. The psychologist also found officer B an optimistic personality, intuitive, reflecting but easily becoming overindulgent. Officer B "does not want to be rushed". He also had a tendency to withdraw and become introverted.

Officer C

Officer C, in his thirties, was insecure, easily frustrated and needed constant correction by his superiors. C had a critical attitude to most things, including the people around him. He was forgetful and had difficulties listening and learning from others. On being criticised, he emotionally defended himself to the point of losing control.

Abstract from officer C's psychological assessment: Officer C met the Safety Aspects. The psychologist added that "… officer C is not very interested in his work, which might hamper his possibilities to take on greater responsibilities". Officer C was also found to be "… an unreflecting individual without much interest in personal development". Officer C was judged to shun conflicts and, being very social, always trying to keep good relations but with difficulties to assert himself in group situations.

Officer D

Officer D, in his early twenties, worked for five periods as a junior but his contract was not prolonged because he was found to be immature, lacking in self-confidence and not suitable for promotion. Officer D was not believed to be capable of taking the necessary actions and initiatives required of a higher rank.

Abstract from officer D's psychological assessment:e: Officer D was judged to be alert and vigilant and he matched the Safety Aspects. Officer D was agile and quick and good at making contact with others. He was anxious to be accepted and respected and might be "… too accommodating or pliable". Officer D requires interaction with others and much dialogue. Officer D was furthermore found to be "eager to please" others.

Officer E

Officer E, in his thirties, had almost constant problems in accepting the shipowner's strict rules and was continuously questioning these. He had quite a negative attitude towards the company, towards the ship and towards most things that didn't go his way. Officer E had, furthermore, difficulties in incorporating new knowledge. His contract was not prolonged.

Abstract from officer E's psychological assessment: Officer E was found to be helpful and accommodating but not very social. He met the Safety Aspects and was well organised and responsible. The assessment noted that officer E might experience problems if faced with an authoritarian leadership style and that he was "resistant to changing his own habits". The psychologist also found officer E well mannered, reserved and with a marked degree of conflict avoidance.

Officer F

Officer F, in his thirties, was found to be a rather critical person who could not adapt to a team or harmoniously team up with others. He was withdrawn, sulky and taciturn and refrained from social contact almost totally. His contract was not prolonged.

Abstract from officer F's psychological assessment: The psychologist found him sensible, organised and judicious. He met the Safety Aspects well. He was furthermore found to be capable but distant and reserved, "… not convinced that social interaction is worthwhile. He may be surly and cross with people without thinking much of it." The psychologist also reported: "[Officer F] will not be sensitive to the group or interested in getting to know the men. People are incidental to getting the job done." Officer F was furthermore "… not in the habit of reappraising his views".

Officer G

Officer G, in his thirties, was terminated after 10 weeks. He behaved in a superior and arrogant way, especially towards crew members from other nationalities. He was constantly complaining about others, guarding his prestige and was perceived as disloyal as well as an outspoken racist.

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Abstract from officer G's psychological assessment: The psychologist found officer G a taciturn, shy and not very social person who was inclined to keep a low profile when interacting with others. He was also judged to be inhibited and self-controlled but basically positive towards others "… trusting them and tolerating them quite easily". He was not, however, interested in other people and had some difficulties in understanding others. He was furthermore found to be a bit naive, but met the Safety Aspects well.

Officer H

Officer H, in his thirties, was terminated after five working periods. Although he was much liked and an agreeable person he did not seem to learn from experience. He made several mistakes, not related to safety, but in other professional areas. Officer H did not seem to improve professionally and he did not fulfil some responsibilities given to him. Finally, his superior lost confidence in him, finding him lacking in initiative and not showing capability for leadership.

Abstract from officer H's psychological assessment: The psychologist found officer H intelligent, curious and open-minded but with a tendency to being cocky. He was also, relation-oriented, sensitive and good at building strong relationships, mainly with subordinates. Officer H was also found to be strong at listening and counselling but ▶

◀ not in leading others, in planning or in supervising. He met the Safety Aspects, maintained control under stress and made sound judgements.

Results

The objective of this study is to measure how effective and accurate pre-employment psychological assessments are in discriminating between suitable and unsuitable applicants according to stipulated criteria. The study tries to answer two main questions:

- How accurate are the assessment methods in identifying important individual characteristics?

- How reliable is a psychological assessment as a support to employment decisions based upon the Desired Standards?

The material at hand shows that 8 (2%) of the total 351 employed officers did not, during real events, meet the Desired Standards. **Table 7** shows, in a tentative way, in what assessment areas these eight officers failed.

A number of officers are marked in the "personality" area. Officer A because of lack of self-control and improper personal standards (openly opposing his Master), officer C because of lack of self-control and unsuitable attitudes (critical and nearly losing control), officers B, E, F and G because of unsuitable attitudes (critical to the operations or to others). Six officers showed various negative traits not related to the Safety Aspects.

Available data reveal that in the cases of officers A, B, D, F and H, the psychological assessments came close to what later in reality became evident. The assessments were thus correct but not acted upon. During some periods in connection with delivery of new ships, personnel officers at Star Cruises experienced acute shortages of officers but a demand for manning the new ships. Because of this some applicants were employed who met the Safety Aspects but were assessed as not fully meeting some of the other Desired Standards.

A strict analysis of available data reveals, however, that two officers, C and D, failed to meet the Safety Aspects contrary to the result in the their assessment. Officer C was found to be insecure, easily frustrated, forgetful and in need of constant corrections. Officer D was found to be immature and lacking in self-confidence. The psychological assessments for these two officers are judged not to have corresponded to their actual behaviour during real events. These two officers should have been rejected by Marine Profile according to the Desired Standards for employment.

Main Headings	Officer							
	A	B	C	D	E	F	G	H
Safety aspects			●	●				
Personality	●	●	●	●	●		●	
Intellectual capacity								
Communicative skills						●		
Drive and activity		●		●	●			●
Social skills						●	●	
Leadership and Management		●						●
Potential for development				●				●

***Table 7**. The dots tentatively indicate in which areas officers A-H failed to meet the desired standards*

The psychological assessment has thus been unsuccessful in identifying correct Safety Aspect capabilities in 2 cases (0.6%) but successful in the other 349 (99.4%) of the total 351 employed officers. The psychological assessments have also been correct in identifying unfavourable personality traits in four of the other officers that failed.

Conclusion

This study reveals that pre-employment psychological assessment with the methods described above has been efficient. The assessment procedure has proved to be nearly totally accurate in discriminating between suitable and unsuitable individuals in relation to specific criteria. It is therefore justified to regard psychological assessment, combined with defined criteria such as the Desired Standard, as efficient tools in enhancing quality in maritime operations and safety.

Background discussion

Psychological assessments have been made for decades for positions in areas where risk is involved. Aeroplane pilots, both commercial and military, from around the world have long been undergoing psychological assessments prior to entering school or before employment. For train drivers, maritime pilots, nuclear plant operators and air traffic controllers, psychological pre-employment assessment has also been a routine procedure for a long time. In all these areas, the rationale has been to employ suitable personalities, to increase safety and to reduce human-factor-induced errors. This study has shown that psychological assessments provide valid and reliable results and that safety in the maritime industry can also benefit. The methodology involved for selection of maritime officers shows even better results than available data from other areas (*Sandahl, 1988*).

A high percentage (99.4%), of the total number of employed officers has performed satisfactorily and safely according to one of the world's most demanding (if not the most demanding) shipowners.

A few comments should be made about the seven officers who were terminated after failure to comply with the company's policies. The psychological assessment method in question is limited to determining whether an individual is fit for the job as stated in the Desired Standards or not. Only in rare cases is psychological assessment on the whole able to judge whether or not someone will break a rule in the future.

Breaking a rule may depend on a variety of unfortunate circumstances and not necessarily on an individual's psychological make-up. Psychological methods can predict such things as breaking rules only if this is a consequence of an individual's mentality, i.e. when someone is in the habit of breaking rules. In the case of alcohol abuse, psychological methods are normally not able to predict a future drinking problem. Psychological methods may, however, identify those who already have a drinking problem. ▶

◀ A healthy individual's psychological make-up normally changes slowly over time. Change is seldom dramatic unless provoked by external circumstances. Attitudes, however, do not necessarily result from layers deeper inside the person and may therefore change more easily. They are more superficial and may be influenced by actualities. Propaganda and commercial advertising are examples of deliberate attempts to influence people's attitudes. A few officers suffered from quite negative attitudes but these attitudes were not necessarily in place at the time of their assessment.

There are indications that pre-employment psychological assessment contributes to a voluntary self-selection prior to applying. Star Cruises has gained a reputation that attracts good professionals. Many regard it as a matter of professional pride to be accepted by a shipowner who is not ready to employ just anyone. Other indications over the years, especially from officers who have just passed their examination, show that those who are uncertain whether they are psychologically fit for the job, refrain from applying and instead seek employment with some other shipowner.

By using a careful selection process, other advantages have also been experienced, as expressed by the shipowner: "This system of selection has led to low turnover, resulting in continuity of employment and increased safety." (*Gronberg, 2001*).

There are indications that officers find confidence in working with other officers they know have been carefully selected in the same manner as they themselves. As a result, the shipowner has experienced a reduction in recruitment and new employment. "This [selection process] has led to cost savings, but most importantly, we are able to retain the personnel to the benefit of safety."(*Gronberg, 2001* a). ■

References

Bratfisch, O. & Hagman, E. *(1991)*
Manual för P-proven och simultankapacitetsprovet. *Stockholm. Arbetspsykologiska Utvecklingsinstitutet.*

Brickenkamp, R. & Zillmer, E. *(1998)*
D2 Test of Attention. *Germany. Hogrefe & Huber Manual*

Gronberg, G. & Sorensen, P. K. *(2000)*
Star Cruises ship simulators. *In: Shariff, F.M.* et al*:* Towards Sustainable Management of the Straits of Malacca. *P 433-448. Malacca Straits Research and Development Centre (MASDEC), Universiti Putra Malaysia. Serdang.*

Gronberg, G. *(2001 a)*
Navigational Safety on Mega Passenger Ships - Highest Priority. *Manuscript. Presentation at Nautical Institute HKG Branch Seminar 2001. The port of Hong Kong Past, Present & Future.*

Gronberg, G. *(2001 b)*
Bridge Procedures - Best Practice. The Star Cruises Perspective. *London Manuscript. Presentation before IMO Working Group for Safety on Large Passenger Ships.*

Kragh, U. *(1955)*
The Actual-Genetic Model of Perception-Personality. *Lund. Gleerup.*

Neuman, T. *(1978)*
Dimensionering och Validering av Perceptgenesens Försvarsmekanismer. En hierarkisk Analys mot Pilotens Stressbeteende. *FOA Rapport C 55020-H6*

Sandahl, F.P. *(1988)*
The Defence Mechanism Test DMT as a Selection Instrument When Testing Applicants for Training as Military Pilots. *Kungliga Krigsvetenskapsakademiens Handlingar och Tidskrift 4/1988.*

Shalit, B.*, (1978)*
Shalit Perceptual Organisation & Reduction Questionnaire (SPORQ). *FOA Rapport C 55021-H6*

Shalit, B.*, (1983)*
Coherence Appraisal and Coping: Parachute Jump Effectiveness. *FOA Rapport C55058-H3*

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