

COMPETITIVE AND SUSTAINABLE GROWTH (GROWTH) PROGRAMME



EDUCATION AND TRAINING REQUIREMENTS

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Work package 5:

HUMAN RESOURCES AND EDUCATION

1. Vocational training as boatsman

1.1 Germany's Vocational training

The male and female boatsman is an apprenticed profession pursuant to the German Vocational Training Act (Berufsbildungsgesetz, BBiG). Inland navigation provides this vocational training without any specialization or focal point. The apprenticeship lasts for three years and takes place at the vocational school and with the shipping company or authority, respectively.

During the vocational training the future boatsmen support the skipper aboard. They take over tasks like berthing and shoving off manoeuvres as well as steering the vessel. Guided activities within the engine room and on deck as for example cleaning, maintaining, repairing work, belong to their duties. They assist during cargo loading and unloading, take care of passengers, prepare meals for the crew and if necessary also for passengers. In case of accidents or emergency they are involved in the first aid.

All these tasks are part of their vocational training with companies dealing with cargo and passenger transport, within inland navigation, port companies and authorities. Their daily work takes place onboard and comprises all activity areas not only on deck but also within the engine room, cargo holds, wheel house and the passenger accommodations.

Very different vehicles might belong to their place of work: cargo vessels, pushing boats, ferries, leisure boats and passenger ships, authority ships as well as floating objects and equipment like cranes and dredgers.

Boatsmen look after the safe transportation of passengers and cargo on inland waterways and the large inland lakes and thus their readiness to mobility plays an important role. They clean their ships at regular intervals and maintain the ship's engine and the auxiliary equipment.

While working on vessels mainly transporting containers or bulk cargo they schedule the voyage, i.e. determine the order of loading, observe and arrange for the loading procedure, transport the containers or the bulk cargo along the inland waterways, arrange for the unloading and finally prepare the ship for her next cargo to be carried.

In case of passenger shipping, for instance onboard of excursion boats or cabin ships, apart from their normal duties boatsmen even take care of passengers. They provide information on possible connections according to the schedule, check the tickets and collect the fares.

Within both areas of activity, namely cargo and passenger shipping, they perform security and safety services.

As male and female boatsmen are often covering long distances on inland waterways, everyday life onboard takes place within a community. For this reason team spirit, reliability and responsibility are significant characteristics which applicants for this occupation should bring along.

Further training possibilities

Male und female boatsmen can participate in different additional trainings, e.g. nautical or certificate courses, which form the basis for a further qualification.

1.2 Specific characteristics of the Dutch education system

The education system regarding Rhine and inland navigation takes place as full-time education or a mixture of full-time education and distance learning. Beside the MBO-education (preparing vocational training for able crewmen) there is a VBO-training (preparing professional training), which does not comprise a professional qualification or result in any graduation. (This is to be compared with the so-called vocational preparatory class in Germany)

Since August 1997 the following legal basis (WEB, Wet educatie en beroepsonderwijs) is applied for this MBO (preparing vocational training for able crewmen) within Rhine and inland navigation, which subdivides this training into four different stages:

1. This is the assistant (vocational preparatory measure).
Does not require any preparatory education. The participant has to be 16 years old.
2. This is the employed person (within inland navigation the able crewman).
The participant has to be 16 years old.
3. This is the expert (within inland navigation the skipper or master). The participant must have passed at least one VBO-exam.
4. This is the specialist (for instance the nautical officer).
The participant must have passed at least one VBO-exam with certain subjects.

Following phase 4 there is the possibility to study at a university.

Structure of the vocational training within Rhine- and inland navigation

According to the legal regulation apprentice within inland navigation belong to stage 2 (able crewman) und to stage 3 (helmsman/skipper and master). At present the Scheepvaart en Transport College in Rotterdam for example only offers vocational training for master applicant. The vocational training as able crewman (apprenticeship) however is carried out by distance education.

Within this act the Ministry attributes the responsibility for the education to 17 different commissions, the so-called state bodies vocational training (LOB). Representatives of employers and trade unions are members of these bodies. As regards these 17 different professions the committees "education – economy" (COB) determine the appropriate requirements the apprentices have to meet.

All stipulated learning contents and programmes are interlinked which means that future masters have also to pass the programme for able crewmen.

The difference between helmsman/skipper and master is that the training as master contains an economic component, so that after having passed the exam the master is able to independently operate his vessel.

The Ministry laid down the training hours with about 1600 per year containing all units (time at school and time for self-training).

Future masters have to complete a programme with 4800 hours within three years, which can be subdivided as follows:

first year: 40 weeks at school (in all 2 weeks onboard of the training ship)

second year: 16 weeks practical training onboard of an inland vessel
If all exams have successfully been passed the qualification as an able crewman is given.
24 weeks at school (in all one week onboard of the training ship)

third year: 16 weeks at school (in all one week onboard of the training ship)
24 weeks practical training onboard of an inland vessel;
after the exam the certificate master within Rhine and inland navigation is granted

Ship certificate: This certificate is achieved after a total training time of four years onboard. In case of a completed nautical vocational training two years of working onboard will be entered within the registration book (which means time till obtaining the certificate is cut).

In addition to their certificate, participants also receive their radar patent, ADNR-permission, first-aid diploma and the diploma of being an independent contractor. If an applicant failed in passing his exam the last diploma is invalid and he can only be employed on a nautical basis.

All criteria are distributed into partial qualifications. For some of them external commissions conduct the exams (e.g. ADNR, Radar, some commercial parts). These partial qualifications are partly tested theoretically and partly both theoretically and practically.

Apprenticeship able crewman

According to the law WEB there have to be possibilities to do the vocational training either in full-time education or by means of an apprenticeship, which means alternation of theory and practical training. The certificates after conclusion of both ways are treated equally. Regarding the education as helmsman there is only one possible training.

As regards the vocational training as able crewman the apprenticeship regulation sets forth since September 1997 that the participants attend school for 14 weeks and spend the remaining period of the total training time of two years onboard.

After eight months they receive the confirmation of being an “interim able crewman” in case they have passed the appropriate qualification exams. This confirmation is expanded to “able crewman” after further two years. However, the validity area for this

certification is limited to inland navigation. Rotterdam and the nautical school of IJmuiden are at present offering these training courses.

1.3 Vocational training and further training in Romania

Basically, everyone can become an inland and maritime skipper who meets the following requirements:

1. realization of full-time school and graduation after having attended the secondary school
2. health certificate (proof of physical ability to become a skipper by written medical attestation)
3. selection of applicants (the average grade is determined; for this purpose 80 % of the grades obtained while visiting the grammar school and 20 % of the grammar school graduation are taken into account).

The vocational training (it is called studies in Romania) lasts about three years either in full-time education or four years in distance learning.

Full-time education starts on October 1 of a year and ends on August 30 of the following year. A year is subdivided into 2 semesters and covers 14 weeks of education. Each semester is finished by a 4 weeks intermediate examination. Applicants will have three vacation periods.

The training programme considers basic subjects, target subjects and occupational and general subjects.

The practical training belongs to the occupational subjects and comprises:

8 weeks with 8 hours education per day resulting in 320 hours which represent about 30 % of the annual programme.

The practical training takes place onboard of an inland ship following the agreement between university council, student and shipping line. The trainee receives the wage of an able crewman during that period and is guided by a nautical officer as tutor.

Education within the first year (first and second semester, 14 weeks in each case, 1110 hours in all)

field	subject	theoretical hours	practical training hours	total hours
foreign languages	English	-	56	56
	German	-	56	56
basic subjects	mathematics	80	56	136
	physics	28	14	42
	chemistry	28	14	42
	technical drawing	38	56	94
	computer programmes	14	56	70
target subjects	mechanics	42	14	56
	technology	42	14	56
	strength of materials	42	14	56
occupational subjects	nautics, traffic management, environmental protection	42	28	70
	practical training onboard		320	320
general subjects	sports (swimming, diving)	-	56	56

Education within the second year (third and fourth semester, 14 weeks in each case, 1076 hours in all)

field	subject	theoretical hours	practical training hours	total hours
foreign languages	English	-	56	56
	German	-	56	56
target subjects	mechanical engineering	28	14	42
	mechanical data of fluids	28	14	42
	electrical engineering, electronics	28	14	42
	ports and waterways	14	14	28
	shipbuilding	42	28	70

occupational subjects	traffic rules	42	28	70
	manoeuvring, rescuing and first aid	42	14	56
	inland-, coastal and maritime navigation (I)	42	14	56
	radar technology	28	14	42
	cargo business	28	14	42
	practical training	-	320	320
general subjects	sports (swimming, diving)	-	56	56

Education within the third year (fifth and sixth semester, 14 weeks in each case, 1104 hours in all)

field	subject	theoretical hours	practical training hours	total hours
foreign languages	German	-	28	28
	voice radio German	-	28	28
	voice radio English	-	28	28
basic subjects	basic transport principles for inland and maritime waterways	56	28	84
	inland and maritime waterways	42	28	70
	inland-, coastal and maritime navigation (II, III)	56	28	84
	towage operation	28	14	42
	cargo business	42	28	70
	use of voice radio	28	14	42
	mechanical equipment	56	28	84
	environmental protection	28	14	42
	practical training	-	320	320
general subjects	sports (swimming, diving)	-	56	56

The student has to pass an examination to receive the diploma. Moreover he has to prove that he had completed a 6 months practical training onboard a ship. If this

confirmation is missing it is possible to subsequently carry out this practical training. A medical certification is additionally required.

All qualifying examinations have to be passed before the Romanian navigation authority.

The practical training takes place aboard the training ship "POLODOR".

The characteristics of this vessel are:

- engine output 820 hp
- suited to different port activities
- manoeuvring
- take over of crewless ship and coordination of crew within the port
- coordination of watch and cargo
- navigation along short stretches
- accommodation capacity for 6 students per day
- completed written agreements with shipping lines concerning the practical training onboard of inland vessels
- laboratory for different activities and thermal motors

In addition the training ship is the laboratory for those students who apply for the certificate "ship electro-mechanical engineering". They work during an additional period as mechanics trainees.

Future developments foresee a shift from 3 to 4 years for the vocational training in Romania. The fourth year should be a practical training onboard of national and international inland vessels.

1.4 The new training programmes within the Federal Republic of Germany pursuant to the reorganisation

The vocational training as male or female boatsman was based on:

- the act of the Reichsgruppe inland navigation, vocational training within trade and commerce of August 1, 1940
- the ruling on the educational background within training schools of North-Rhine Westphalia (AO-BS) of December 5, 1989 (BASS 13-34 No. 12.1)
- regulations and training programmes for male or female boatsman of February 1, 1997,
RdErl. of the Ministry of School and further education (NW) of October 21, 1966

Led by the Federal Ministry of Education and Research and with the participation of social partners' of the Employers' Association, ver.di and the Federal Institute of Vocational Training as well as representatives of the permanent conference of the ministers of education the new training regulations and basic criteria for the vocational training as male or female boatsman were defined. This new regulation will enter into force in August 2005.

1.4.1 Skills and knowledge

§ 4 of the new regulation stipulate the training as follows:

The vocational training is intended to impart the skills and knowledge listed hereinafter:

1. occupational image, labour law
2. enlargement and organisation of the companies offering a vocational training
3. safety and health protection during work
4. environmental protection
5. planning, preparing and control of work procedures, team work
6. information and communication
7. assisting in the operation of vehicles on inland waterways and within ports
8. legal requirements relating to ship's operation and their fulfilment
9. building basics of inland vessels
10. transport of goods and passengers
11. customer orientation and quality assuring measures
12. involvement in logistical procedures
13. business management of a ship
14. maintenance of the vessel and its equipment
15. behaviour under special circumstances, collisions and break downs

The trainers have to develop a concept for the apprentices taking into consideration the new framework regulations.

1.4.2 Learning Fields of Framework Curriculum

Concerning the competencies to be trained the framework curriculum lays down the following basic targets:

Occupational safety and protection of the environment are of significant importance for male and female boatsmen. For this reason, special attention should be paid to these subjects and the problems involved. Especially,

- principles and measures regarding the prevention of accidents and safety at work to prevent damages caused to health and occupational diseases as well as measures to support health promotion
- necessities and possibilities considering the arrangement of the work place to be human and ergonomic
- occupation related environmental load and steps taken to avoid and reduce it
- recycling and appropriate disposal of operating supplies
- principles and actions considering the efficient use of resources and materials during work

Customer contacts as well as the necessary advice and care require, above all in passenger shipping, a high communicative competency of male and female boatsman. Due to spatial condition aboard the ability to adapt oneself to different communicative situation is of high advantage. The vocational training should give special attention to these skills.

The teaching of foreign languages should also be included with about 40 hours.

The following learning fields are to be dealt with within the training period of three years:

1. information of new employees on organisation and structure of shipping companies
2. planning and organisation of life and team work aboard
3. scheduling of ship operation
4. operation and maintenance of propulsion unit and main engine
5. behaviour of inland ships during operation
6. training of visual and audible signals during operation and stopping manoeuvres
7. preparation of transport procedure taking into account legal and economic aspects
8. operate and maintain all systems aboard
9. transport of goods and passengers
10. operation on inland waterways
11. run and maintain hydraulic, pneumatic and electric equipment
12. use and maintenance of auxiliary equipment
13. maintenance of ship's hull and other equipment
14. loading and unloading of inland vessels
15. initiate actions after collisions

All listed learning fields have to be integrated into didactical annual schedules on the occasion of an appropriate conference of education authority members. Main task of this educational conference is to concretise the curriculum requirements for this vocational training within the framework of a didactical schedule. In addition, characteristics of the area and the place where the vocational training takes place as well as the latest reference aspects should be taken into account. As regards the didactical realisation of the curriculum this educational conference cooperates with all parties participating in this vocational training.

The following time table shows the annual hours which are available.

	lessons			
	1 st year	2 nd year	3 rd year	total
training area with vocation overlapping relevance				
German / communication	40	40	40	
religion	40	40	40	
sports / health promotion	40	40	40	
politics / social studies	40	40	40	
total	160	160	160	480
occupation related training area				
economics and business operation	40	40	40	
learning field	280	280	280	
total	320	320	320	960
field of differentiation				
total	(80)	(80)	(80)	(240)
all in all	480 (80)	480 (80)	480 (80)	1440 (240)

1.4.3 Examinations

In order to identify the educational status it is necessary to have an intermediate examination. It should take place at the end of the second vocational year and covers all fields being essential for skills and knowledge to be acquired during the first 18 months as well as the content of the framework curriculum as far as it proves to be significant for the vocational training.

The final examination covers skills and knowledge mentioned in the appropriate regulation and the content of the schedule imparted at vocational schools as far as it proves to be significant for the vocational training.

Part A provides that the examinee should accomplish (previously on-the-job-test) one task within at most 7 hours and document it by the relevant papers which are usual in this line of business. Furthermore, he has to conduct a professional conversation of at the most 30 minutes within these 7 hours that may consist of different parts.

The following task would be possible:

- assistance in the steering of an inland vessel.

The examinee should prove that he is able to independently plan and carry out operational procedures taking into consideration economic, technical, organisational and time requirements, control operational results as well as take steps covering safety and health and environmental protection on-the-job. Moreover he has to show that he is in the position to berth and cast off a vessel, operate technical equipment, control and maintain, carry out work on deck, maintain wires and ropes, handle life saving appliances and personal protective equipment and finally operate a life boat.

The professional conversation shall reveal that he is capable to outline occupation related problems and their solutions, present the relevant professional background for the tasks as well as justify the approach when accomplishing a task.

Part B (previously written test) contains the examination in the following fields:

1. nautical field – 120 minutes
 - legal regulation on waterways
 - traffic geography
 - hydraulic engineering works
 - navigation equipment
2. ship operation technology – 90 minutes
 - legal regulation on waterways
 - behaviour in the water
 - equipment on deck
 - loading and unloading and transport
 - safety regulations
 - ship operation economy
3. engine and motor technology – 90 minutes
 - propulsion technology
 - electrical engineering
 - hydraulics

- pneumatics
- 4. economics and social studies – 60 minutes
 - general economic and social interrelations regarding professional and on-the-job area referring to incidents related to practice will be examined.

The examination is considered to be passed if the examinee proved satisfactory skills and knowledge with regard to part A and part B. Additionally, three parts of the examination must have been concluded with a sufficient achievement and as far as the remaining parts are concerned no inadequate performance has to be produced.

An oral additional examination is only allowed when it is necessary for the passing of the examination within part B.

1.5 Further training within inland navigation

After the training as male or female boatsman different locations offer possibilities for further training.

1. skipper certificate
 - minimum age of 21
 - holding a radio certificate for inland navigation (UBI)
 - after 4 years of being a crew member aboard an inland vessel, 2 years at least as able crewman or at least one year fulfilling a higher-ranking task
 - physical ability to become a skipper (testified by a medical proof)
 - nautical skills as well as adequate knowledge of relevant regulations and waterways, in particular of those stretches the certificate will cover
 - ability to supervise a ship's crew
2. radio certificate
3. ADNR-certificate

1.6 Educational attainments within the dual system

During the training as male or female boatsman the apprentices attend three courses at the Schiffer-Berufskolleg RHEIN. The relevant course lasts between 12 and 14 weeks. While being at school the Employers' Association of Inland Navigation arranges for the apprentices to live aboard the training ship RHEIN.

Apart from their vocational attainment (the examination is taken before a committee of the responsible chamber of industry and commerce) the students obtain at a grade point average of "satisfactory" a diploma.

Students who started their vocational training without a qualifying secondary school exam will achieve this certificate together with their professional diploma.

In addition, trainees who attended at least 80 English lessons (this subject is offered bindingly for all students since 1999) have the possibility to attain their specialised secondary school certificate. They have to prove a grade point average of '3,0' to obtain this graduation. On this basis the graduation will be granted without any additional examination.

Besides there is a possibility to have separate classes for students having this specialised secondary school graduation when starting their vocational training. Consequently, they have to be educated in this one class for the total period of three years. The training at the vocational school would lead to the specialised secondary school graduation after an additional examination and the one as skilled worker. This graduation enables the students to study at all universities of applied science and to enrol for integrated study courses at comprehensive universities or regular universities. Special courses are offered for these students.

1.7 Additional qualification for activities within and outside inland navigation

In Duisburg the boatsman will find a further training as business economist with main focus on transport logistics. For application the boatsman certificate is requested and at least a three years of practical experience.

Apprentices can, apart from the general certificates at the vocational school, achieve the following additional certificates during their training at school:

- fist aid training and certificate
- safety expert
This course takes place in close cooperation with the employer's liability insurance association and will be held during school time by experts of Binnenschiffer-Berufsgenossenschaft and Schiffer-Berufskolleg RHEIN. At the end there is a written examination resulting in an additional certificate. After three years practical experience this task can be assigned to them by the employers.

1.8 Expectation towards vocational companies and vocational school

The vocational school and the vocational companies perform their common educational task within the dual system.

In doing so the vocational school is an independent education place and cooperates as an equal partner with all parties participating in the vocational training. It's task is to impart general and professional knowledge to the male and female students taking into consideration the demands of the vocational training.

The vocational school focuses on basic and professional knowledge thereby improving the existing general education. Students should gain a qualification which enables them to comply with professional tasks and to responsibly organise the work place and environment on a social and ecological basis. The vocational school adheres to Länder regulations existing for this kind of school. In particular the profession related training refers to standard regulations issued for each state-approved recognised occupation.

According to the framework agreement for vocational schools (decision of KMK of March 15, 1991) the vocational school focuses on:

- imparting of professional capability, covering competences concerning professional subjects as well as human and social aspects

- professional flexibility to meet changing requirements within the fields of work and society, above all against the background of Europe growing together
- the arousal of the willingness to go on with the training
- the support of ability and motivation to act conscientiously on the individual way of life and within public life.

In order to achieve these goals the vocational school has to:

- align the training to the specific educational methods which put emphasis on Hands-on learning
- teach professional and occupational field spanning qualifications simultaneously considering the required job specialisation
- offer a differentiated and flexible training to cope with different abilities and skills as well as the respective requirements within the fields of work and society
- as far as it is possible support and further disabled and handicapped trainees
- point out environmental threats and accident risks arising during work and private life and show possibilities to eliminate or weaken them.

In addition, vocational schools should deal with current core problems during their general and professional training like

- employment and unemployment
- peaceful coexistence of humans, different nations and cultures in our world by maintaining cultural identities
- keeping of natural basics of life
- protection of human rights.

1.9 Comparison of the vocational training within three European countries

For comparing purposes of the vocational training as boatsman within Europe all possibilities offered should be compared. This expenditure however could not be integrated into this analysis. For this reason three different typical vocational trainings were chosen and compared which can be considered to be representative for the training within European inland navigation.

These three trainings have completely different starting points namely

- the vocational training strictly taking place at school within the Netherlands
- the vocational training within the dual system in Germany
- a kind of general training in Romania.

All other Rhine riparian states do hardly differ from these three reference possibilities. Switzerland for example also trains within the dual system and its apprentices attend school lessons at Schifferberufskolleg RHEIN in Duisburg.

It is quite obvious that these three countries significantly differ as far as the advanced training is concerned.

Only after the qualification as able crewman an advanced training can be started within the Netherlands. The training as boatsman and further as master takes place in a consecutive way and is held by one educational institute only.

In Romania the vocational training is linked with a kind of university. Participants obtain during this training their qualification as able crewman and if they continue also their master certificate.

The basic training (able crewman) in Germany is regulated by law. Content as well as procedure of the examination are laid down. Furthermore the laws contain the dual partners. The basic training also comprises the education at school. The advanced training however does not claim this basic training. There is no requirement to start with the vocational training as able crewman and then afterwards continue with the training as skipper.

The vocational training lasts between two and six years like another study has shown.

Concerning these different training possibilities the following question is really important: "Which training foresees that together with their certificates for inland navigation the apprentices obtain other relevant qualifications which allow them to work in other business fields?"

2. Concepts for advanced trainings by extensive cooperation of the dual partners

2.1 New possibilities and concepts for training and advanced training within inland navigation

Promotion prospects within inland navigation are to be considered as promising due to the existing age pattern of the employees. At least every third of the crew members is a skipper.

From the very beginning of their vocational training young people have sufficient room for their personal development. On the other side the training however claims from them a high degree of responsibility and willingness to act independently.

Inland navigation offers excellent prospects to the young generation.

Unlike within other European countries in Germany unfortunately the responsibility for the vocational training starting as able crewman up to the master certificate is spread to different bodies. Advanced training possibilities are even not interlinked, so that new approaches have to be found to improve the training in general.

In the first step the young apprentice does a vocational training of three years. Examinations are taken by the relevant Chamber of Industry and Commerce. To gain further qualifications experiences in the field of inland navigation are required. The appropriate regulation expects that a four years experience as well as a minimum age of 21 have to be proved before a skipper certificate can be granted.

The applicant can gain the relevant knowledge by advanced training courses and the examination takes place before the Water and Shipping Directorate. These courses can be taken with different institutions without evidence of a special qualification. Among others these advanced training courses comprise subjects like radar technology, voice radio, transport of hazardous goods and partly the education necessary to become an

instructor. Commercial topics are of minor importance during this training though skippers have to manage their own company.

2.2 New approaches to in-company vocational training and advanced training

After the experts passed the draft regulation of the vocational training as male or female boatsman as well as the framework curriculum the new regulation for this occupation will enter into force as from August 1, 2005.

As regards the basic vocational training all mentioned goals will then focus on the development of skills for decision-making and taking over responsibility. This would mean that each individual is willing and able to show a proper, deliberate as well as personally and socially responsible behaviour as to social, professional and private situations.

Quality assurance and development are paid attention to by each school within the framework of the enlarged freedom and ability for decision making.

Quality of school is on the one hand defined by the structure of the work process considering all participants like teachers, trainees, parents, vocational companies as well as school organisations and on the other by the opening of the school to the local and regional environment. This process aims at the assurance of teaching and learning as well as of its quality.

Planning, mentoring and directing these different teaching-learn-processes as well as performance evaluation are essential tasks to be fulfilled by the instructors. As far as professional courses within the dual system are concerned requirements exist regarding didactical-methodological planning processes at schools with curricula structured by subject area which expand the freedom and ability for decision making of each individual school. Curricula structured by subject area and with the possibility of individual design demand that instructors and teachers participate in the development and realization of school curricula.

In all it can be said that the following basic components should be taken as guideline for the review of success within curricula structured by subject area:

- The verification of the learning success must not only refer to partial skills as to the concept for professional activities since the structure by subject area supports a comprehensive development of skills. Thus, the review of the learning success cannot concentrate on for example the systematic specialized knowledge any longer, because otherwise personal and social skills would lose importance.
- The verification of the learning success should deal with tasks arising from a situation which depends on the subject area and which the trainees can use to demonstrate their action knowledge.
- The learning field concept requires a close cooperation of all teachers within this educational field. They commonly develop the didactical annual forecast which comprises the educational schedule as well as the concept and the adjustment of examinations on learning success.

The requirements of this new regulation will result in an even closer cooperation with the dual partner. Instruction concepts have to be elaborated commonly to guarantee the learning success for the occupation boatsman. Learning tasks must be developed and imparted during training.

Moreover, in-service measures will be necessary. Due to block instructions trainees have to be also trained during their long absence period from school while they are working onboard. Preparatory papers will in future be handed over to apprentice so that they can work on these papers and return them to school (e.g. via internet). That way it is ensured that the learning process will continuously be improved during the whole vocational training period.

Additional qualifications with certificates are offered beyond the actual vocational qualification.

- ★ swim training with DLRG-certificate , bronze or silver
- ★ safety expert in cooperation with the responsible Accident Prevention & Insurance Association
- ★ handling and use of life saving appliances and fire extinguishers
- ★ first experience with regard to the handling and transportation of hazardous goods
- ★ knowledge of radar technology
- ★ voice radio certificate.

This new approach can in close cooperation with the Employers' Association of Inland Navigation probably result in the development of a future vocational advanced training concept, covering advanced trainings build on each other up to the master's certificate. Commercial aspects should be considered that way that participants are able to obtain a certificate comparable to that of a master craftsman or technician in industrial economy.

The educational course as Business Administration Expert with emphasis on logistics represents a first step for trainees intending to work with a shipping line.

Starting with the vocational training as able crewman within inland navigation a fundamental training as skipper should build up on this. This advanced training could be structured as follows:

preparation for the certificate examination before the Water and Shipping Directorate, UKW-voice radio, transportation of hazardous goods (ADNR)	advanced training in the technical field of: shipping operation technology, motor technology, electrical engineering, loading and unloading of inland vessels	training to become an instructor, advanced pedagogical training	commercial vocational training, handling of business processes, loading documents, basic legal knowledge
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Beside these further training possibilities an additional general-education certificate should be added to this advanced training programme. A concluded master craftsman training enables the holder to study at a university of applied sciences. This way should be opened for boatmen as well.