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7 December 1978
English

**DEVELOPMENT
OF THE
FURNITURE AND
JOINERY INDUSTRIES
AND CREATION
OF A CENTRE,**

DP/YUG/78/006

YUGOSLAVIA,

Technical report:
ASSISTANCE IN FURNITURE DESIGN

Prepared for the Government of Yugoslavia by the
United Nations Industrial Development Organization,
executing agency for the
United Nations Development Programme

 **United Nations Industrial Development Organization**

United Nations Development Programme

DEVELOPMENT OF THE FURNITURE AND JOINERY INDUSTRIES
AND CREATION OF A CENTRE

DP/YUG/73/006

YUGOSLAVIA

Technical report: Assistance in furniture design

Prepared for the Government of Yugoslavia
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Ilmarinen Tapiovaara, expert in
design of upholstered furniture

United Nations Industrial Development Organisation
Vienna, 1976

Explanatory notes

References to "dollars" (\$) are to United States dollars, unless otherwise stated.

The monetary unit in Yugoslavia is the dinar (Din). During the period September–November 1976, the value of the dinar in relation to the United States dollar was \$US 1 = Din 18.10. :

OOOR refers to the Osnovna Organizacijska Udruženog Radu (a self-managed unit of an enterprise).

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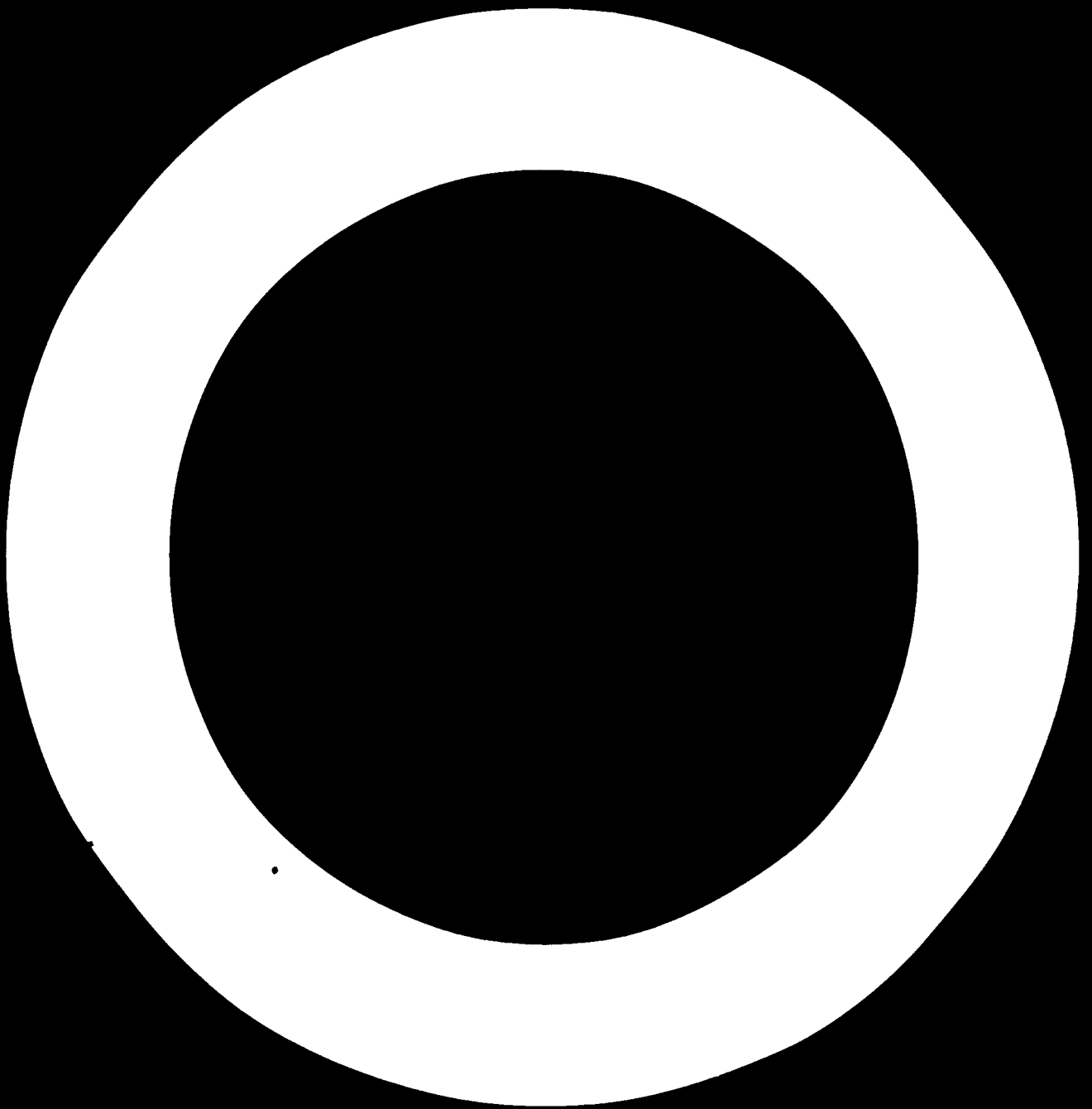
Mention of firm names and commercial products does not imply endorsement by the United Nations Industrial Development Organization (UNIDO).

ABSTRACT

As part of the parent project "Development of the furniture and joinery industries and creation of a centre" (IP/YUG/73/006) that is being carried out by the United Nations Industrial Development Organization (UNIDO) acting as executing agency for the United Nations Development Programme (UNDP) in response to a request from the Government of Yugoslavia, an expert in the design of upholstered furniture was sent on a two-month mission to assist the staff of the ŠIPAD Design Centre in Sarajevo and four ŠIPAD upholstered furniture factories to introduce new designs and to improve the procedures of developing prototypes. The mission lasted from 13 September to 12 November 1976. Arslan Raščić served as counterpart.

The expert visited the four factories briefly, making an analysis of each and providing them with basic sketches. He also visited the Zagreb Furniture Fair. He gave a slide lecture to an audience of about 50 persons, consisting of staff from the ŠIPAD factories, designers and students in Sarajevo, and a second slide lecture to an audience of about 100 in Skenderija.

One of his principal recommendations was that ŠIPAD develop a new line of furniture incorporating new designs - ŠIPAD Modern - that would be exhibited and marketed separately from its older, conventional lines.



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INTRODUCTION

The furniture and joinery industries of Bosnia and Herzegovina contribute about 8% of the goods and services produced in the Republic and represent 4% of its exports. An ambitious five-year development plan is being implemented to double the production of furniture to attain a value of Din 2,000 million and to increase the work force from 6,000 to 9,000 persons. This plan calls for an investment of Din 800 million. Joinery production will increase from Din 200 million to Din 650 million and the work force will treble to reach 4,500 persons. Investment of Din 950 million is foreseen for joinery plants.

SIPAD, a co-operative forest industry organization consisting of 126 factories and employing 55,000 persons, accounts for 65% of sawmilling and 85% of the final products of the wood industries of Bosnia and Herzegovina. The Government of Yugoslavia on behalf of Bosnia and Herzegovina and SIPAD decided to request assistance from the United Nations Development Programme (UNDP) in developing the Republic's furniture and joinery industries.

The assistance being provided in design of furniture and joinery, production management, quality control, documentation and marketing is part of the project "Development of the furniture and joinery industries and creation of a centre" (DP/YUG/73/006) that is being carried out by the United Nations Industrial Development Organization (UNIDO) acting as executing agency for UNDP. The project, which began on 1 September 1974, is scheduled to last for three years and four months. The UNDP contribution is \$555,000, that of the Government of Yugoslavia, Din 19,247,900.

The long-range objectives, as set forth in the project document, are to enable the furniture and joinery industries in Bosnia and Herzegovina initially and in all of Yugoslavia eventually to make a greater contribution to the economy. Immediate objectives are to help the industries to increase the value of their products, to improve quality, to reduce costs of production, to design new products and to forecast market requirements.

The assistance in design is being provided to the factories through the SIPAD Design Centre in Sarajevo. This Centre has a staff of 17 and provides central services in the design of all types of furniture, joinery and prefabricated wooden houses for the factories in the SIPAD organization.

As part of the project, Ilmari Tapiovaara, expert in the design of upholstered furniture, was sent on a two-month mission to assist the staff of the SIPAD Design Centre and four SIPAD upholstered furniture factories to introduce new designs and to improve the procedures of developing prototypes. The mission lasted from 13 September to 12 November 1976. Arslan Rašić served as counterpart.

The expert visited the four factories briefly, making an analysis of each and providing them with basic sketches. He also visited the Zagreb Furniture Fair. He gave a slide lecture to an audience of about 50 persons, consisting of staff from the SIPAD factories, designers and students in Sarajevo, and a second slide lecture to an audience of about 100 in Skenderija.

I. FINDINGS

SIPAD

SIPAD is a large organization that has grown rapidly. Future growth should be planned; otherwise the company image will suffer. A good company image is always a wise investment, one of the most profitable investments a company can make.

The image a company projects is formed of many elements, first and foremost of which is the quality of the product. Additional elements in the case of SIPAD include sales outlets, transport vehicles, offices, buildings, all printed matter, its newspaper, all graphic production models, materials used, factory surroundings, uniforms for officials, apartment houses for its employees, kindergartens and factory tours given to visitors.

Visit to Zagreb Furniture Fair '76

The expert visited the Zagreb Furniture Fair '76. It was his first visit to a large Yugoslav furniture exhibition; previously he had visited only some small Yugoslav pavillions at international fairs. His interest was in upholstered furniture.

SIPAD had a 2,000-m² exhibition area. The exhibit was well designed and easy to follow. One could get information easily. But it lacked colour and it would have benefited from closer team work between architects and manufacturers. Each SIPAD member exhibitor had planned his part of the exhibit by himself, using his own colours and materials. Only one common theme with co-ordinated colour and material suggestions would have given a more distinctive character and greater uniformity to the huge SIPAD exhibition and would have brought valuable advantages to SIPAD exhibitors with respect to competitors.

SIPAD doors and windows and the entrance furniture elements were well exhibited. School furniture, including some well-designed school tables, was also reasonably well displayed.

More than 90% of all upholstered furniture represented designs dating from as long ago as 20-30 years. It does not need further analysis. The expert believes that the heavy type of furniture sells so well, because there is no alternative.

The expert found that the furniture exhibited by CONJH in Zivulice (production, 1 million tables a year) was poor. The materials used were too thin and the construction was not sturdy enough. A more interesting design and a better construction for each table even if it meant a higher selling price would be advisable.

SIPAD marketing specialists and top management should consider whether it would not be advisable to set up permanent exhibition facilities for SIPAD.

Visit to factories

The expert made brief visits to several factories (one day per factory) for purposes of analysis. Matters discussed at each factory included product policy, characteristics of the factory, design policy and characteristics of the region, factory layout for producing new designs, new upholstering techniques, as compared with the old, quality control, the use of Yugoslav raw materials (leather and textiles) for coverings and future plans. Problems related to one prototype were analysed.

The expert made basic sketches for the four factories that had requested assistance in designing. It was agreed that every factory would make full-size drawings in its own studio using its techniques as best it could. The first prototype was finished almost on time. All those completed were photographed (see annex II).

The expert's findings with respect to the factories visited are summarized below.

STANDARD OOUR, Sarajevo

Prototypes of the designs allocated to this factory were not completed, contrary to the plan. This big factory with about 800 employees has its own prototype workshop. Six weeks was too short a time in which to make prototypes to the point where they could be reasonably corrected. The present system of having the prototype workshop produce commercially is unsound, since (a) productivity is low by commercial standards and (b) the workshop is needed to produce the prototypes. Ideally it should work independently, not relying on outside orders, when new prototypes are to be produced there. The prototype workshop should be considered a laboratory; it was created to strengthen the factory.

MAJEVICA OOUR, Brčko

The factory was established 20 years ago. It has about 700 employees mainly producing panel furniture; only 70 work in the upholstered section. The factory has grown in a haphazard way, the location of existing buildings on the site complicating unnecessarily both planning and production; and certain compromises both in design and production have had to be introduced because of this haphazard site layout.

The expert suggests that a "one floor - one roof" plant be designed from scratch on a completely new site. Production flow and processes should be studied for this new plant also from scratch (without being influenced by the present condition). Such a new, modern plant will greatly increase profitability and is a sound investment.

Prototypes were finished, as agreed; some small corrections were made. Sofas and easy chairs designed were named by colour etc.

The final group of prototypes, 16-18 pieces together, will be finished in two months in time for the ŠIPAD - MODERN exhibition. Photos were taken for the first version of those two prototypes plus materials (see annex II).

RAJNIK OOUR, Bos. Gradiska

A large part of the factory, which employs 1,100 persons, produces its own upholstering components (Bonel-type mattresses, springs, polyurethane in different hardnesses and shapes). It also has its own department for producing frames for upholstering. The plant is efficiently run.

The factory has a successful wall-unit programme. Upholstered furniture production is not satisfactory according to the management. They have too large a stock, and new ideas are not easy to introduce. An upholstering series is quite large - 300 pieces.

In the expert's opinion, RAJNIK needs a new, modern line of products to sell along the old line. A better sales department is also needed.

In spite of the advice the expert gave (which was similar to that given to the other factories), no prototype work was done. The drawings of the models designed for this plant are given in annex II.

BUDUCNOST, Bos. Samac

The factory, a combinat, is 20 years old, with 450 employees. In 1972, it started furniture production. The joinery department has 180 employees and the upholstering department 110 employees. The annual value of production is \$7 million (= \$15,000 per employee). Forty technicians are at school and 15 employees are studying at the university at company expense. The factory has its own well-trained designers - architects who are trying to develop a modern design policy. The architects are willing to co-operate in work on the new SIPAD Modern line.

During the mission, a new, small section in the factory was established as a prototype workshop to follow new design development. The furniture prototypes designed by the team under the guidance of the expert were the first products from that section.

Prototypes that were sketched for BUDUCNOST and later studied in full size drawings were not totally finished. Some corrections were made. A preliminary series of models was named with numbers of elements, colours and upholstering cover materials.

The final group of prototypes, about 20 pieces, will be finished during the next two months. A photographic record was made (see annex II).

Results of discussions

After a careful study and many discussions with representatives of the plants in Sarajevo, Brčko, B. Samac, B. Gradiska, the expert and the managers of these factories agreed that there was no great need to redesign and improve the old upholstered sitting units, since manufacturers knew that they were old. Nevertheless, there is no plan for small corrections; more visible changes would change the units structurally and thus would result in totally new designs, which, aesthetically, would be outmoded.

Finally, it was agreed by all concerned to leave the old programme as it was, and not to change marketing procedures.

All manufacturers agreed to create totally new models with organic, more modernized methods and structures. They also agreed that while the new models were being developed, the marketing had to continue using the old line as the main line until the new production captured a large share of the market.

New upholstering designs

Sketches of the new designs were delivered 10 days after the expert's arrival in Sarajevo. It was agreed that full-size working drawings would be made by design teams of the factories. This division of the work was adopted to give the best results. Four design teams were created. Each factory was given the opportunity to reflect all its technical and other abilities at this stage of the planning work. The expert supervised the work of the teams.

This work method served as an example to the factories of how to create an effective design team. Two counterparts from the Design Centre were involved in this work.

Upholstering materials

All upholstered furniture is covered by textiles, a large part of which is imported, in particular, from the Federal Republic of Germany. However, some textiles produced in Yugoslavia - velveteen, velure, cotton and canvas - are comparable in quality to those produced in Western Europe. Yugoslav velure is produced in different colours and patterns from those of the velure at present imported by the furniture industry for use as a cover material for its exports. For example, shantung No. 833/RM5, made by DEKORATIVA, Ljubljana, comes in rich colours and could serve as a replacement for some of the imported furniture textiles.

Before the mission was carried out, it had not been realized that in Bosnia an excellent type of leather for furniture is produced (by VISOKO in Visoko) as well as skai. The expert visited Visoko twice to discuss production of leather used for upholstery. Leather is 30-50% more expensive than textiles. However, customers in Western Europe are willing to pay correspondingly higher prices to have a material that lasts for almost a lifetime, has a luxurious feel and is cool but not cold to the touch. All upholstered furniture designed during the mission could be produced covered with leather.

During the mission only Yugoslav leather and textiles were used for the prototypes.

Design Centre

The Design Centre has been established to assist all SIPAD factories. One of its most important tasks is to make models for member industries.

Most of the factories have planning teams and many also have prototype workshops. If a factory has its own workshop, the workshop should be independent, that is, should be under no production pressure. If the workshop is engaged in production, its effectiveness is reduced. It is more profitable to make prototypes outside the factories. It is also more profitable to group these factories without workshops and provide them with a central and well-equipped workshop that would make the models needed. The Design Centre could assume this task.

The expert had an opportunity to discuss projects of the Design Centre with some of its staff. One project was for a new hotel with a large indoor swimming pool and saunas.

Design of present and future production

If a furniture producer wishes to increase his production capacity, two alternatives exist:

- (a) He can produce traditional types of furniture, similar to those produced by competitors, undercutting the prices of his competitors, and thus selling a large volume;
- (b) He can sell high-quality products that follow the trends of the international markets with respect to design but develop his own characteristic line of products and designs.

Hitherto SIPAD has been mainly following the first alternative, producing traditional types of furniture in large runs. The time has come, however, to consider producing also more modern types of furniture, designated SIPAD Modern, which would initially be sold on the domestic market, and, when quality had improved sufficiently, marketed also abroad. The new, modern line would sell better if marketed separately from the traditional line, with a view to attracting a youthful, modern-minded clientele. Thus, the traditional image of SIPAD need not be modified, and a new clientele with a taste for the modern could be acquired that would be distinct from the existing clientele.

Once SIPAD Modern has been accepted on the local market and production and quality improved, the designs would serve as a nucleus for yet another line, SIPAD Intermode, which would be especially designed to meet the requirements of the international market.

Competitions for the design of upholstered furniture

Together with the design activity of the Design Centre, another way of establishing a connexion with new designers is through competitions for furniture design. Not all competitions are successful; they often turn out badly, but the organizer always learns what the trends in design are. Sometimes he establishes personal contacts with designers. All this depends on whether the organizer has invested enough money to interest designers in participating in the competition.

The following types of design competitions are suggested:

Competition for domestic designers

International competition

Competition by invitation (domestic designers with international names; from 4 to 10 invitations)

Competition for domestic designers

The northern part of Yugoslavia has several good and promising designers. Money prizes for a competition for domestic designers should be relatively high. A royalty of 2-3% of the factory price is suggested. This type of prize creates a long-time relationship between the factory and several designers. A minimum of one outstanding international designer in the jury is necessary.

International competition

An international competition must be even more carefully organized than a domestic one, costs more and requires an international jury more than half the members of which are foreigners.

Prices and royalty must be related to the trend of the times. The programme should not be large and should be planned in detail.

Competition by invitation

In the last 10 years Italian furniture industries have gained an international character, partly through their furniture design competitions by invitation. Many of these competitions are paid for by the Government or by regional investment funds to help local industries. Cantu, Como, Mariano, Comense Brianza etc. have their own competitions. Cantu has established a large permanent exhibition with an area of some 7,000 m³. In the last few years the organizers have invited 10-15 outstanding designers, architects or studios, paid a certain amount of money per capita, and participated in annual furniture exhibitions.

The scope of this form of competition needs to be defined precisely. The cost is high, but most of the competitions have apparently been relatively safe investments for the organizers, since the system has been used for many years.

The Slovenian furniture industry has achieved good results in organizing such competitions. It would, perhaps, be willing to share its experience.

II. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Some Yugoslav cover materials (leather, cotton or velure textiles) meet the standards of export markets and could easily be substituted for imported materials.
2. SIPAD needs good designs desperately if it is to increase its share in the domestic market and to have an effect on the export market.
3. SIPAD needs to improve its company image through its production models, exhibitions and showrooms, graphic designs, advertising and packaging, although some progress has been made in this area.

Recommendations

1. SIPAD should promote separately from its present line a new line of product, SIPAD Modern. This line should be based on new designs, new materials, new colours and promoted through a different type of publicity programme. It should be displayed at separate stands in exhibitions and in separate areas of sales outlets or even in separate outlets, with a view to attracting a new, youthful clientele.
2. Measures to project an excellent company image similar to those successfully adopted by concerns such as Olivetti, Shell, Esso, Bayer and all airlines (particularly Swissair) should be taken.
3. The SIPAD outlet opposite the Hotel Europa (or other favourable location with modern facilities) should be improved to make it the first showroom for SIPAD Modern in Sarajevo. A SIPAD Modern exhibition should be presented in this showroom as soon as prototypes are available.
4. A. Since exhibitions have educational value, they should be used as an aid in the continuing education of factory salesmen, executives and other employees.
B. The structure of SIPAD stands at exhibitions should be designed so that they can be used again and again, with only the general plans changed from exhibition to exhibition. The structure should be designed on the basis of modular units (as shown in annex II, figure VII). Bright colours should be used in exhibitions because colour is a factor in sales promotion.

5. THE SIPAD newspaper, which could contribute to an enhanced company image and could become a useful link between factories, should be improved. The following measures should be taken, with the assistance of the Design Centre:

(a) The layout should be reduced to half the actual size, to give a magazine type of format;

(b) One of the central pages of every issue should be reserved for items about furniture or interior design and prefabricated houses. These items should always be placed in the same place in the paper;

(c) Every issue should have a "clippers page", design news from all over the world (Domus, Abitare, MD, Form etc.), including pictures and texts reproduced within copyright limitations;

(d) Better paper should be used;

(e) The newspaper should be made interesting to traders outside SIPAD, and be considered a family magazine, which could serve as an effective instrument to help form opinion for SIPAD marketing teams;

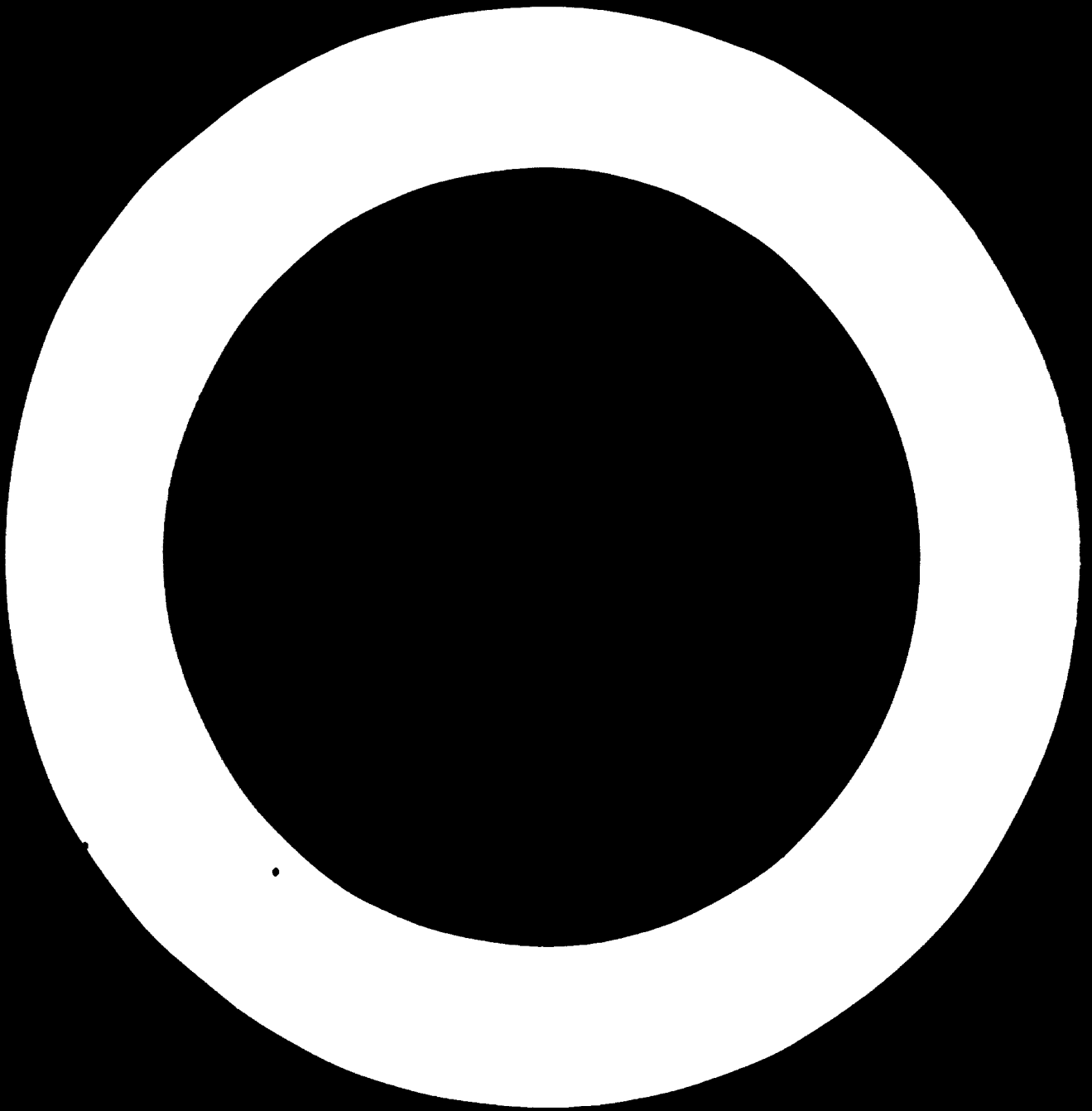
(f) More open discussion among furniture factories and news about their furniture models should be included.

6. The Design Centre should recruit its designers for specific assignments on a non-permanent basis as a means of introducing new ideas and of keeping abreast of trends at home and abroad.

7. Competitions for domestic designers of upholstered furniture should be organized. After experience has been gained in this area, an international competition should be organized.

8. An expert should be sent on a follow-up mission to continue consultations on furniture design and to advise the Design Centre on management. A suggested job description for the expert is given in annex III.

Note: Recommendations 3 and 7 are restatements of earlier recommendations. See report by A. Vodder, DIP/ID/SER.A/8. Recommendations 4 and 5, although touching on recommendations made by A. Vodder and R. Routamo, are essentially new.



Annex I

JOB DESCRIPTION

POST TITLE: Expert in the design of upholstered furniture.

DURATION: Two months.

DATE REQUIRED: As soon as possible.

DUTY STATION: Sarajevo, with possible travel in the Republic of Bosnia and Herzegovina.

PURPOSE OF PROJECT: To assist in the development of the furniture and joinery industry of the Republic of Bosnia and Herzegovina, including the creation of a Centre.

DUTIES: The expert will be attached to the SIPAD Design Centre (which will eventually be incorporated into the Centre to be created). He will be responsible to the National Project Director and will, in collaboration with SIPAD Design Centre's Yugoslav staff, work in the Design Centre. Specifically, the expert will be expected to:

1. Redesign, in collaboration with the staff of the SIPAD Design Centre, the products at present manufactured;
2. Design upholstered furniture for both home and institutional use in collaboration with the staff of the SIPAD Design Centre and staff of the Standard factory in Sarajevo and the Radnik factory in Bosanska Gradiska;
3. Train counterparts in the above fields.

The expert will also be expected to prepare a final report, setting out the findings of his mission and his recommendations to the Government on further actions which might be taken.

QUALIFICATIONS: Architect or furniture designer with considerable experience in the design of upholstered furniture. Familiarity with the latest upholstery methods (foam, integral foam, fibre stuffing and cold foam processes) desirable.

LANGUAGE: English; knowledge of French desirable.

Annex II

SKETCHES AND PHOTOGRAPHS OF THE PRODUCTS DESIGNED

Figure I. Sketches of prototype for easy chair (A) and sofa (B); photographs of easy chair (C)

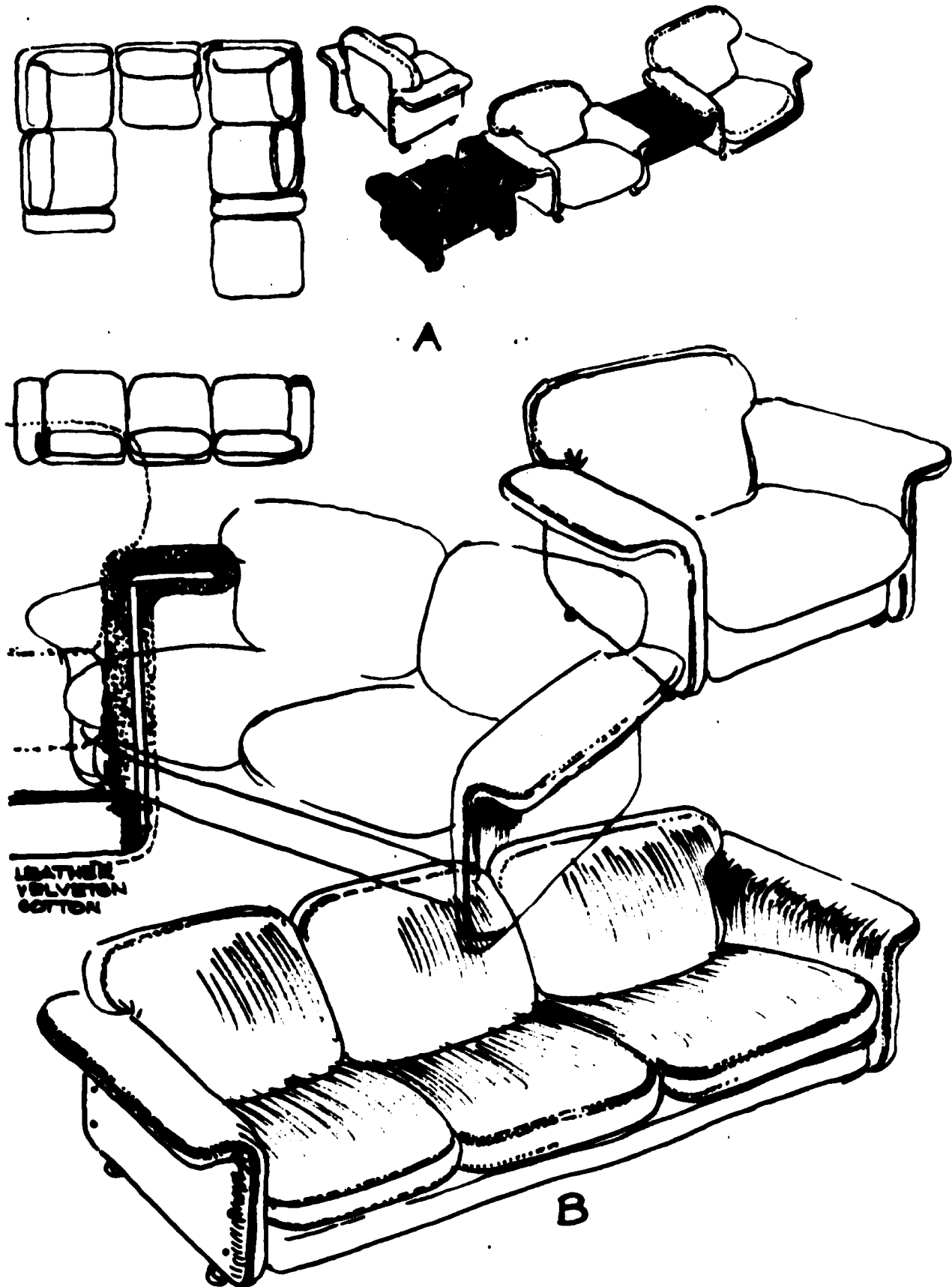
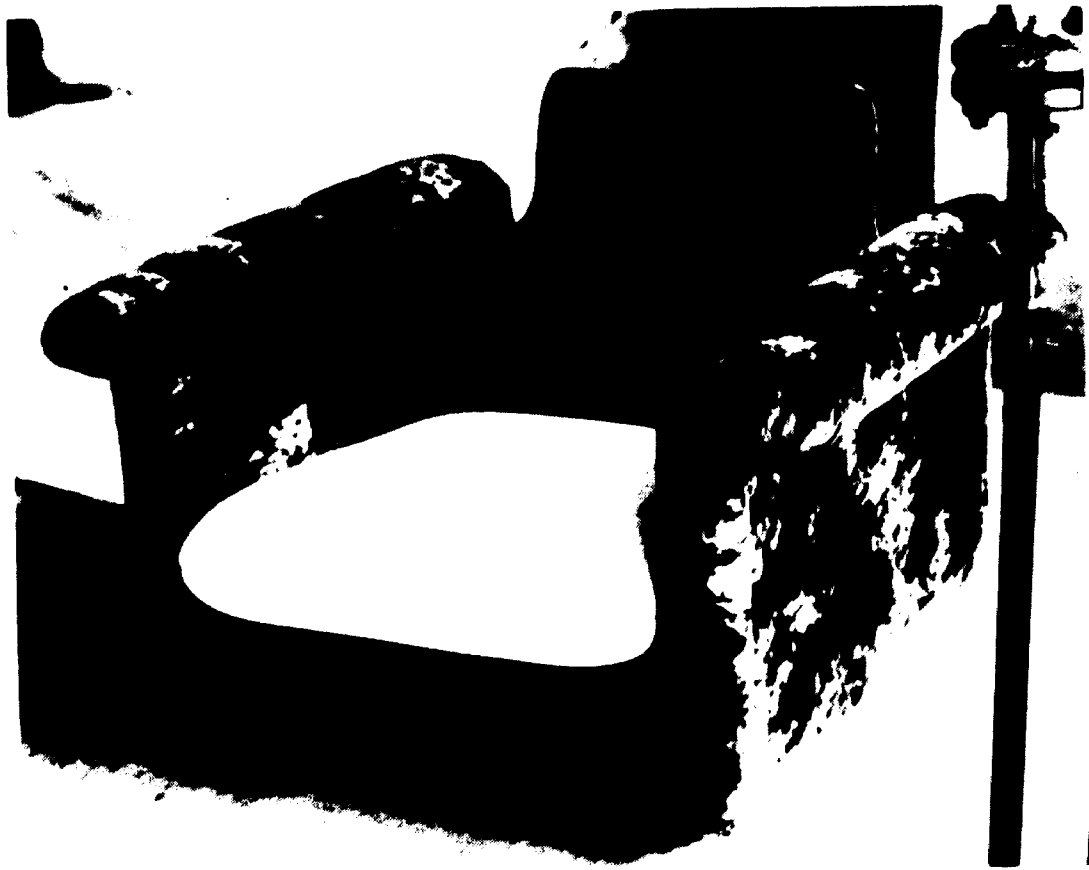


Figure I (continued)



C

Figure II. Sketches of prototype for sofa and easy chair system, springs, leather (A and B); photograph of sofa (C) and easy-chair (D)

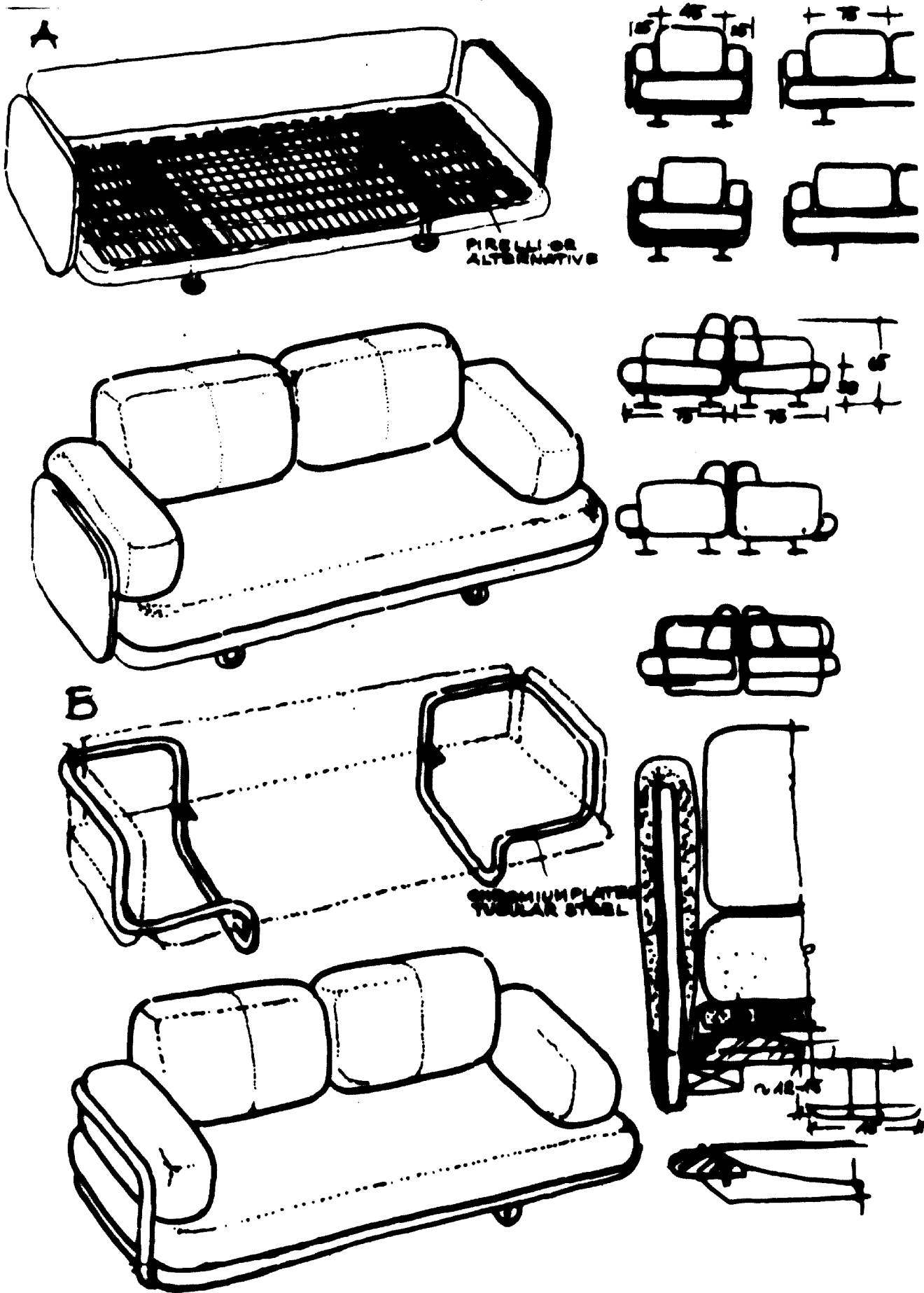
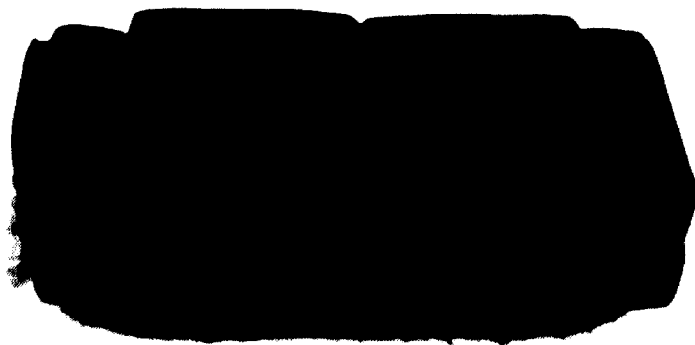
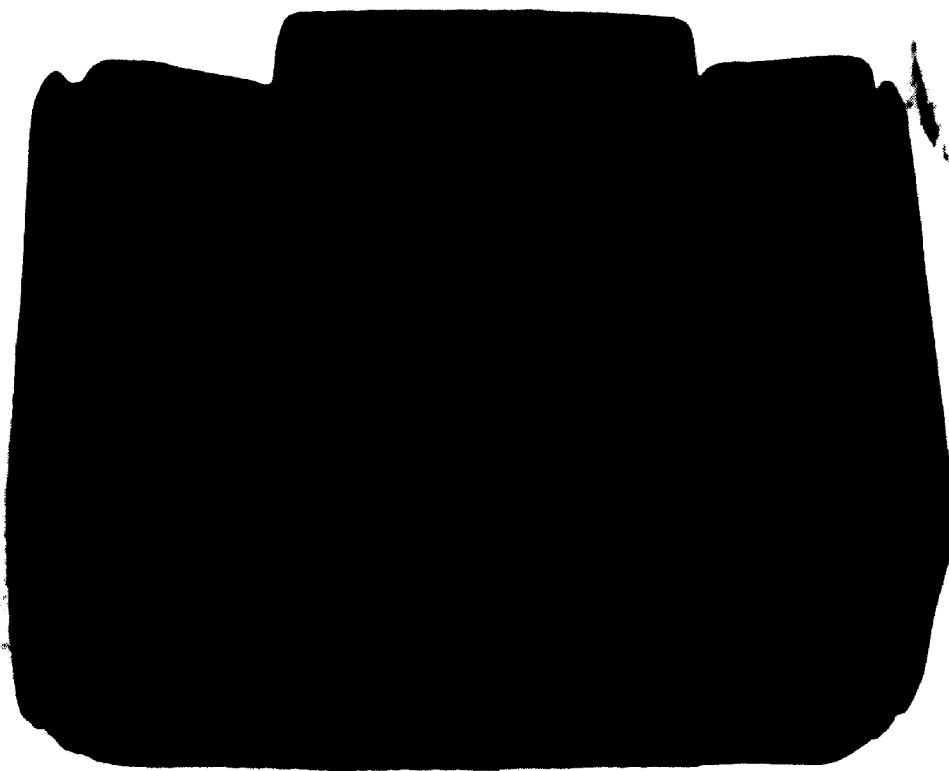


Figure II (continued)



C



D

Figure III. Sketches of prototype for sofa and easy-chair system, particle board/blockboard (A); photograph of system (B)

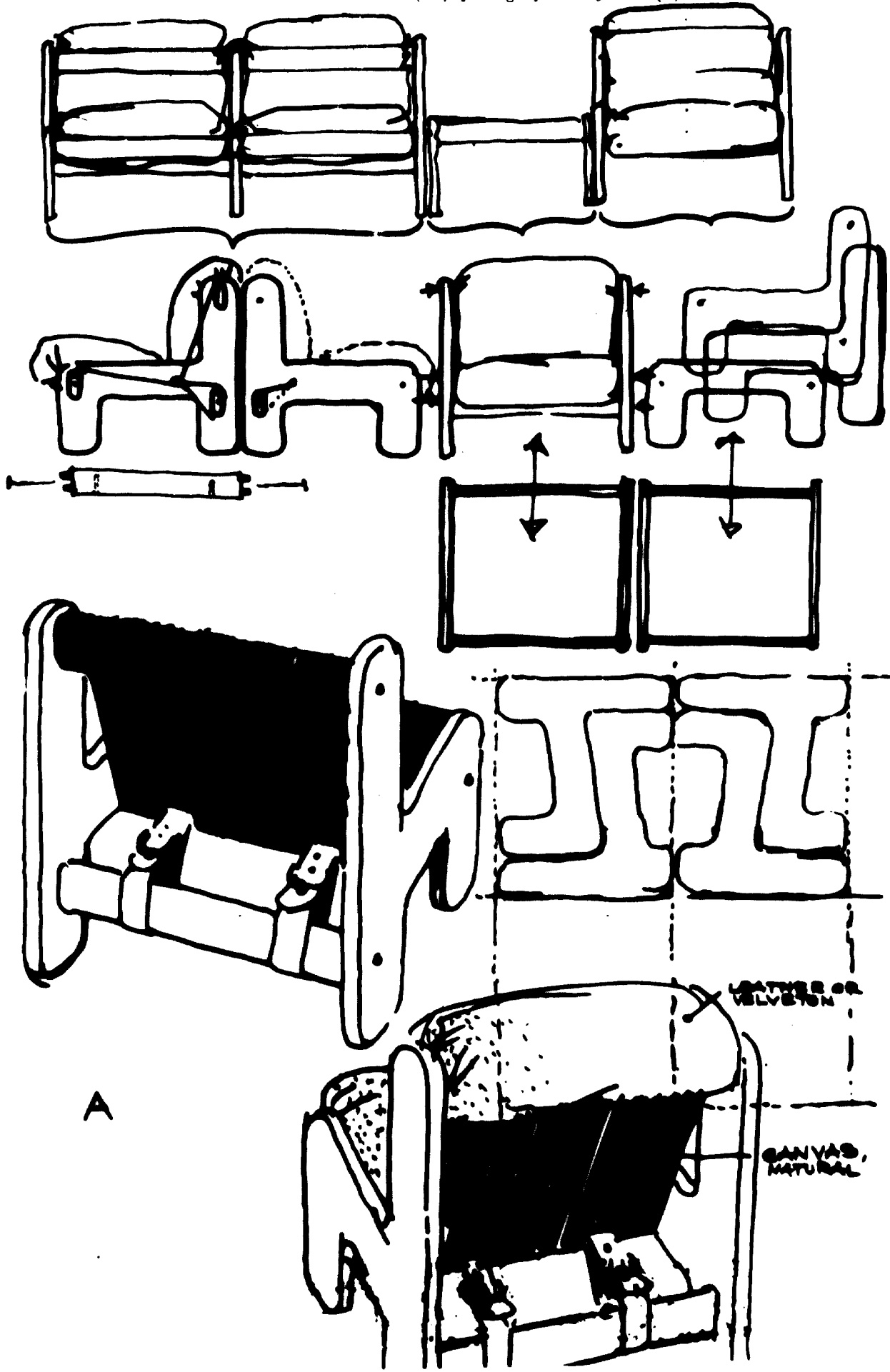


Figure III (continued)

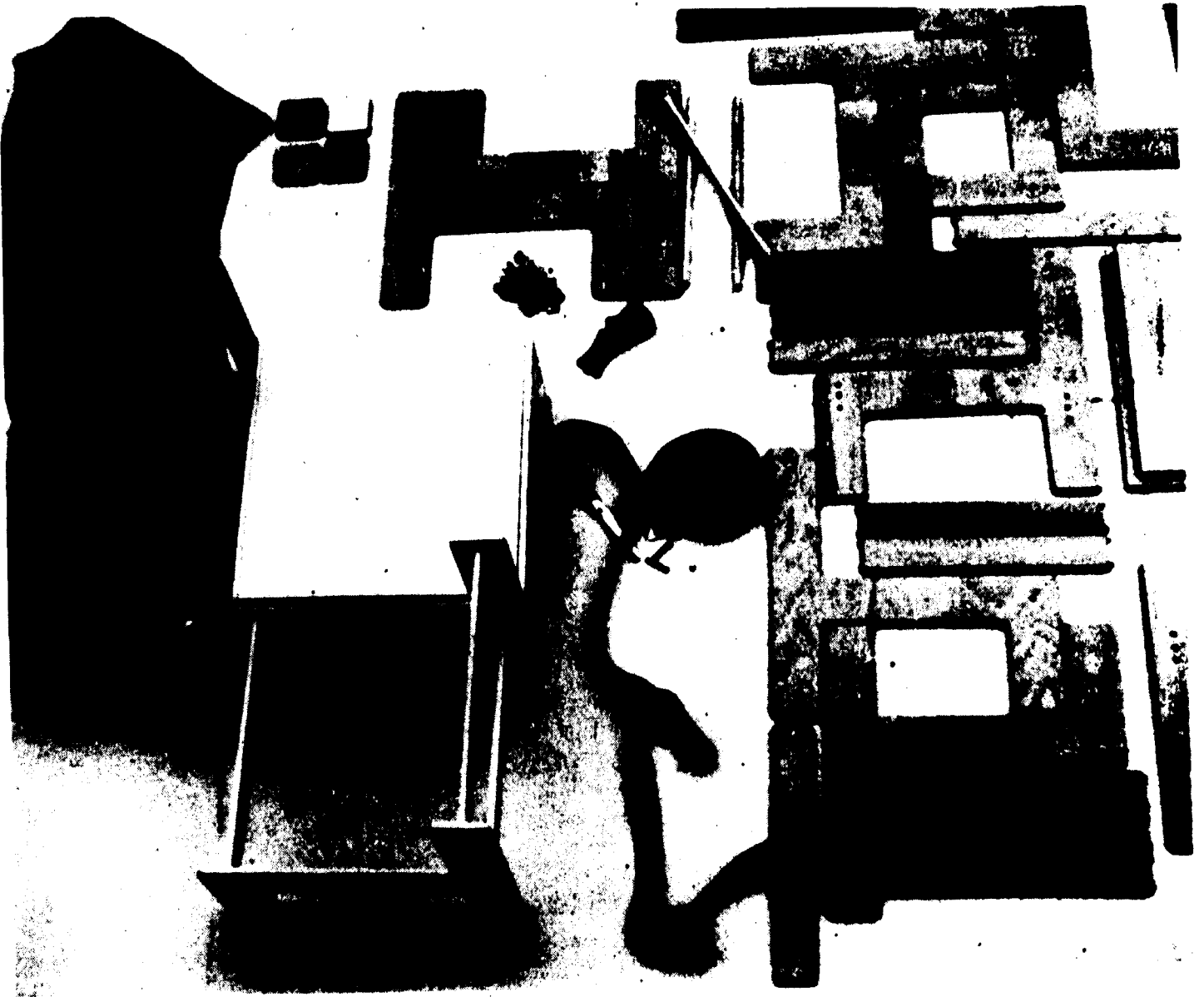


Figure IV. Sketches of leather chair with redpeach parts

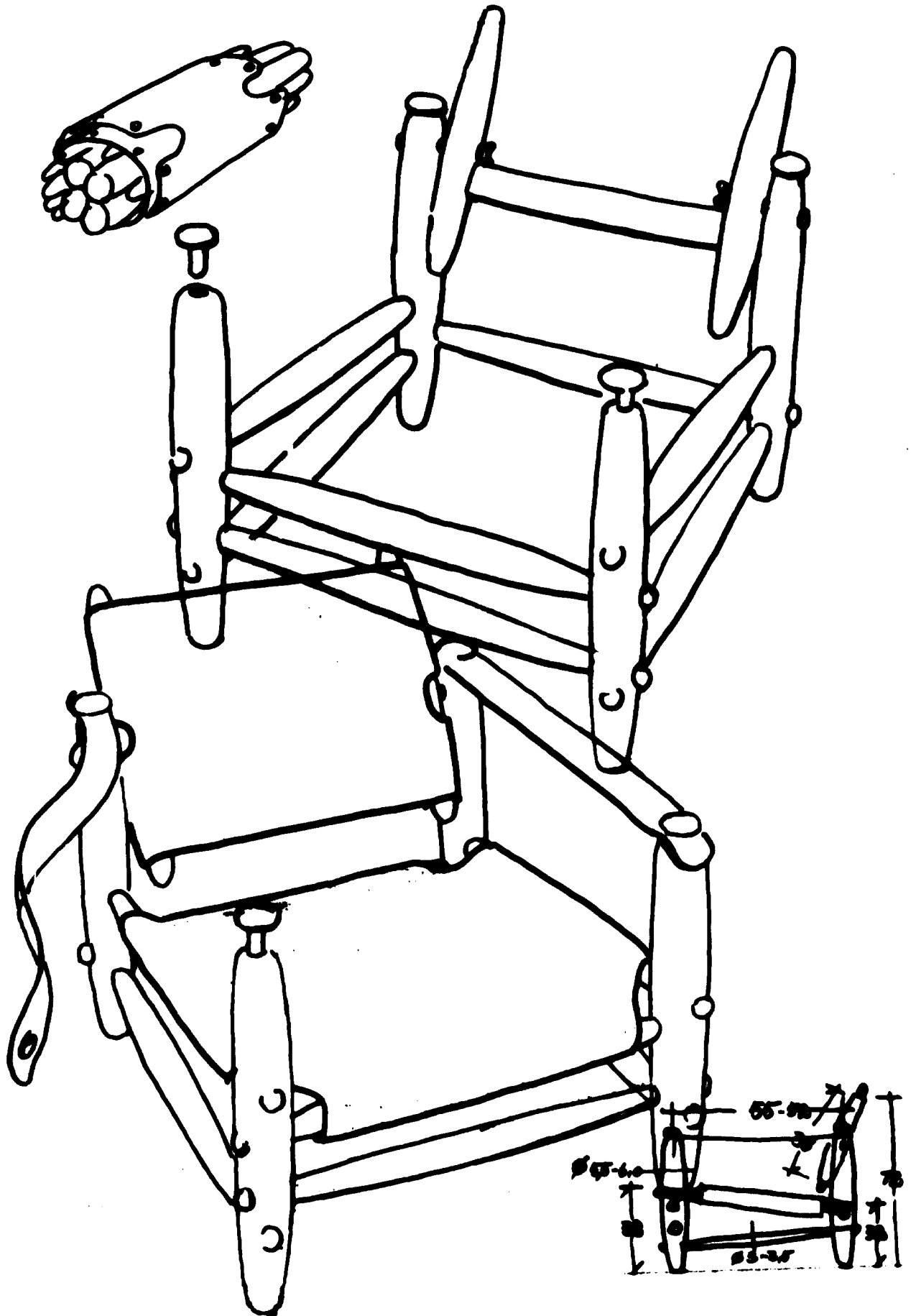


Figure V. Sketches of elementary sofa system A, polyurethane

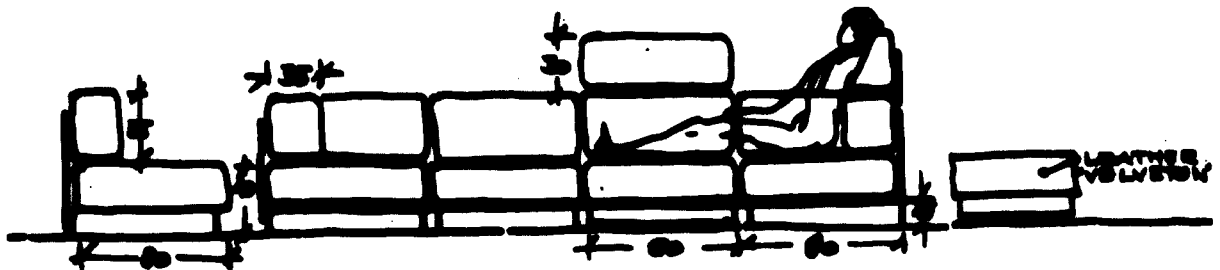
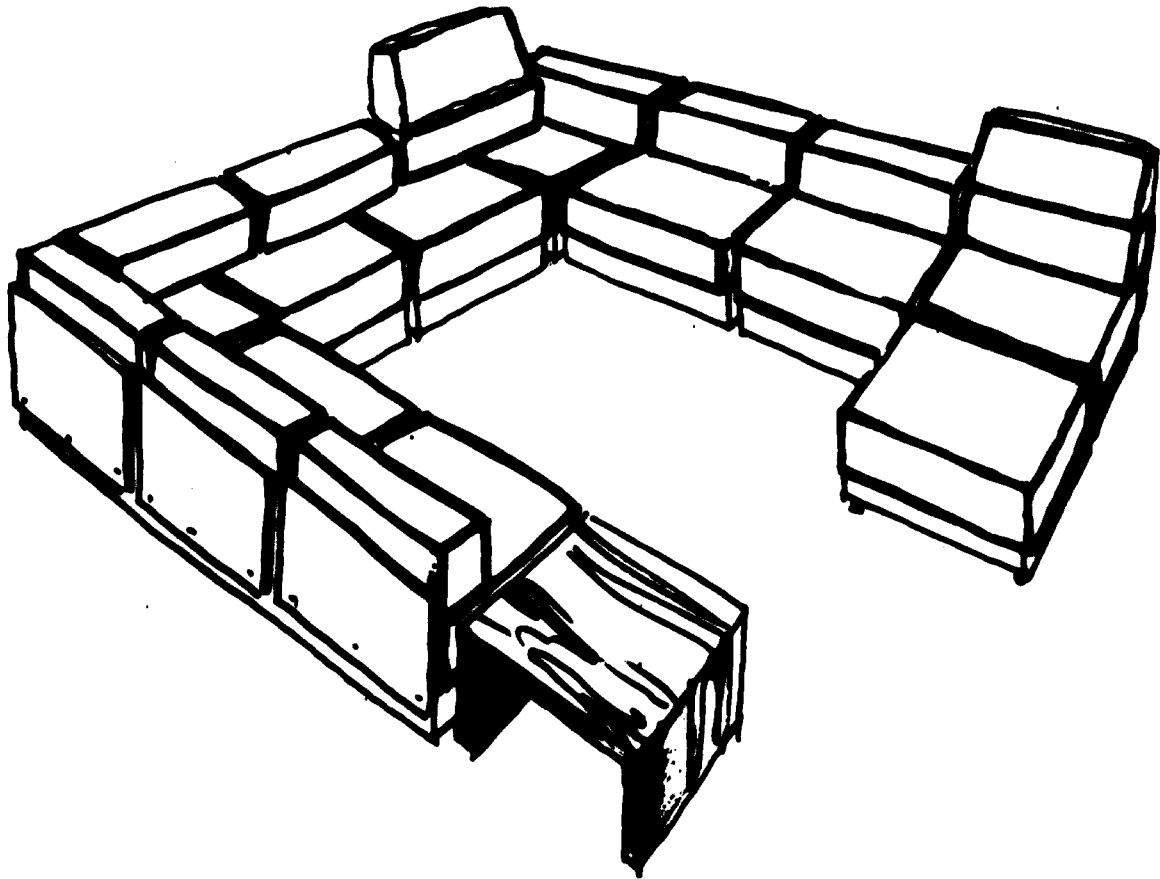


Figure VI. Sketches of elementary sofa system B, polyurethane

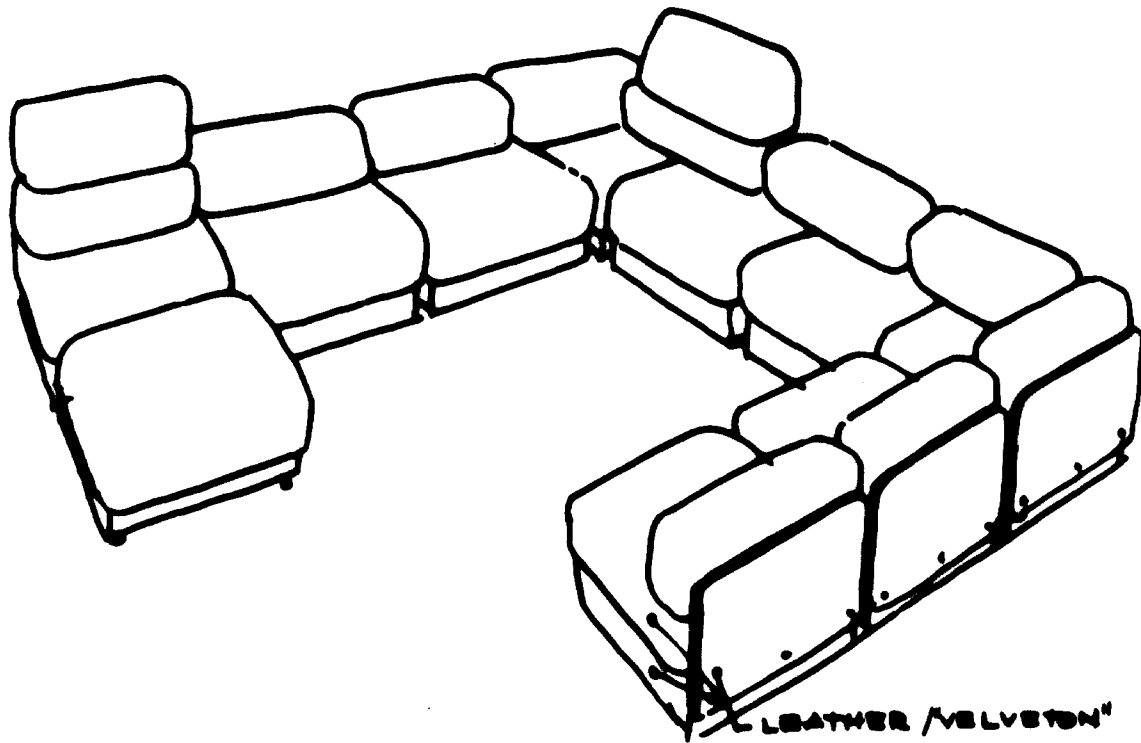
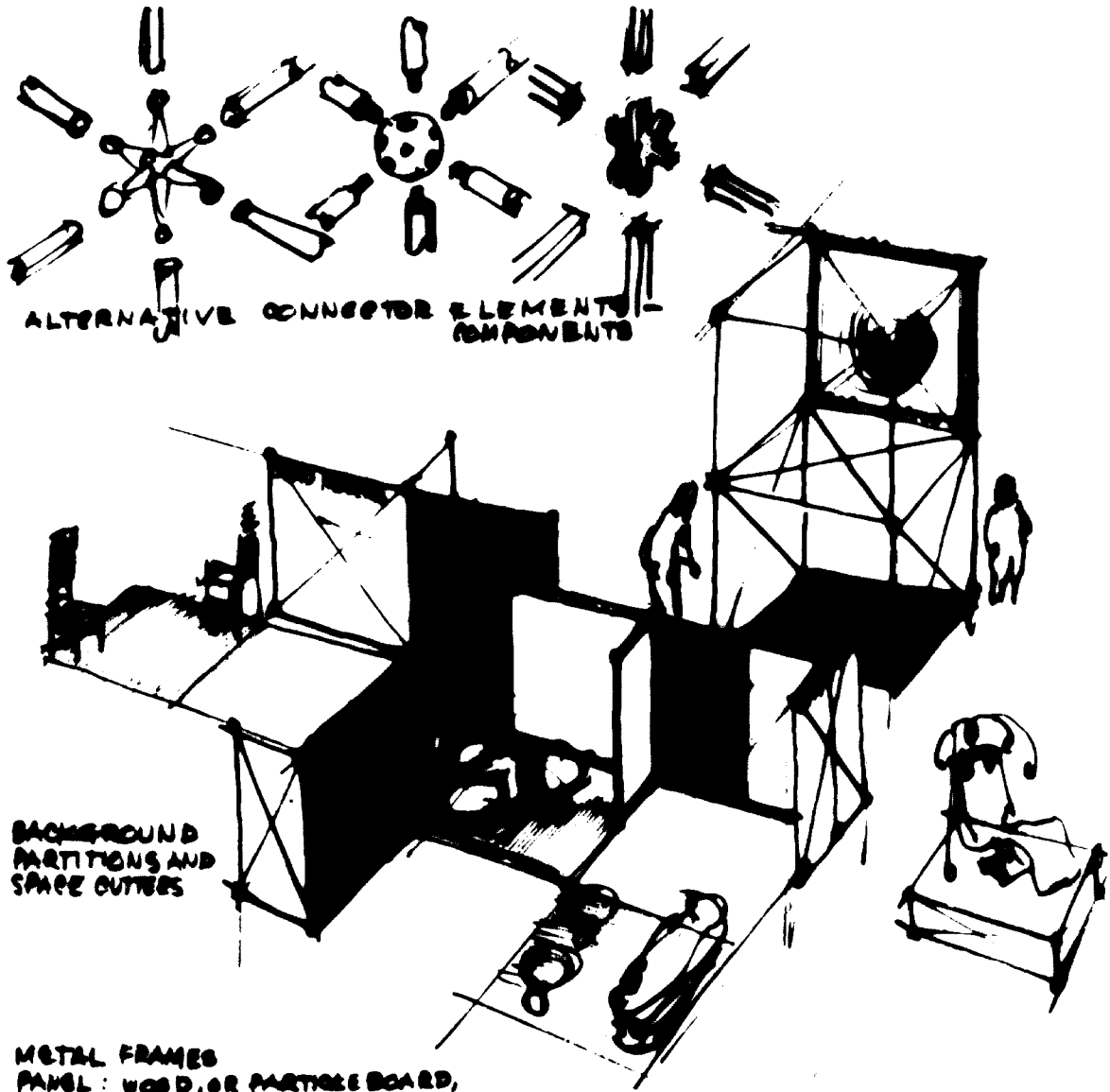


Figure VII. Sketches of partitions and components for SIPAD Modern exhibition

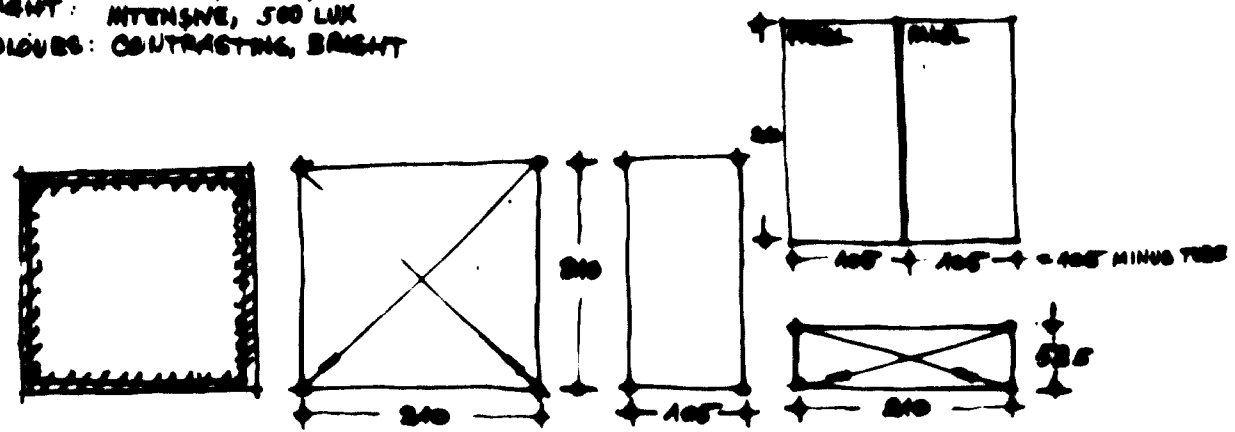


ALTERNATIVE CONNECTOR ELEMENTS - COMPONENTS

BACKGROUND PARTITIONS AND SPACE CUTTERS

METAL FRAMES
PANEL: WOOD, OR PARTICLE BOARD,
CANVAS, OTHER TEXTILES
SKIN, PAPER

CEILING: CHESSE CLOTH, PAPER, PLASTIC
FLOOR: CARPET, COBB, PLASTIC
LIGHT: INTENSIVE, 500 LUX
COLOURS: CONTRASTING, BRIGHT



Annex III

PROPOSED FOLLOW-UP JOB DESCRIPTION

POST TITLE: Expert in the design of upholstered furniture.

DURATION: Two months.

DATE REQUIRED: March - April 1977

DUTY STATION: Sarajevo, with considerable travel in the Republic of Bosnia and Herzegovina

PURPOSE OF PROJECT: To assist in the development of the furniture and joinery industries of the Republic of Bosnia and Herzegovina including the creation of a Centre.

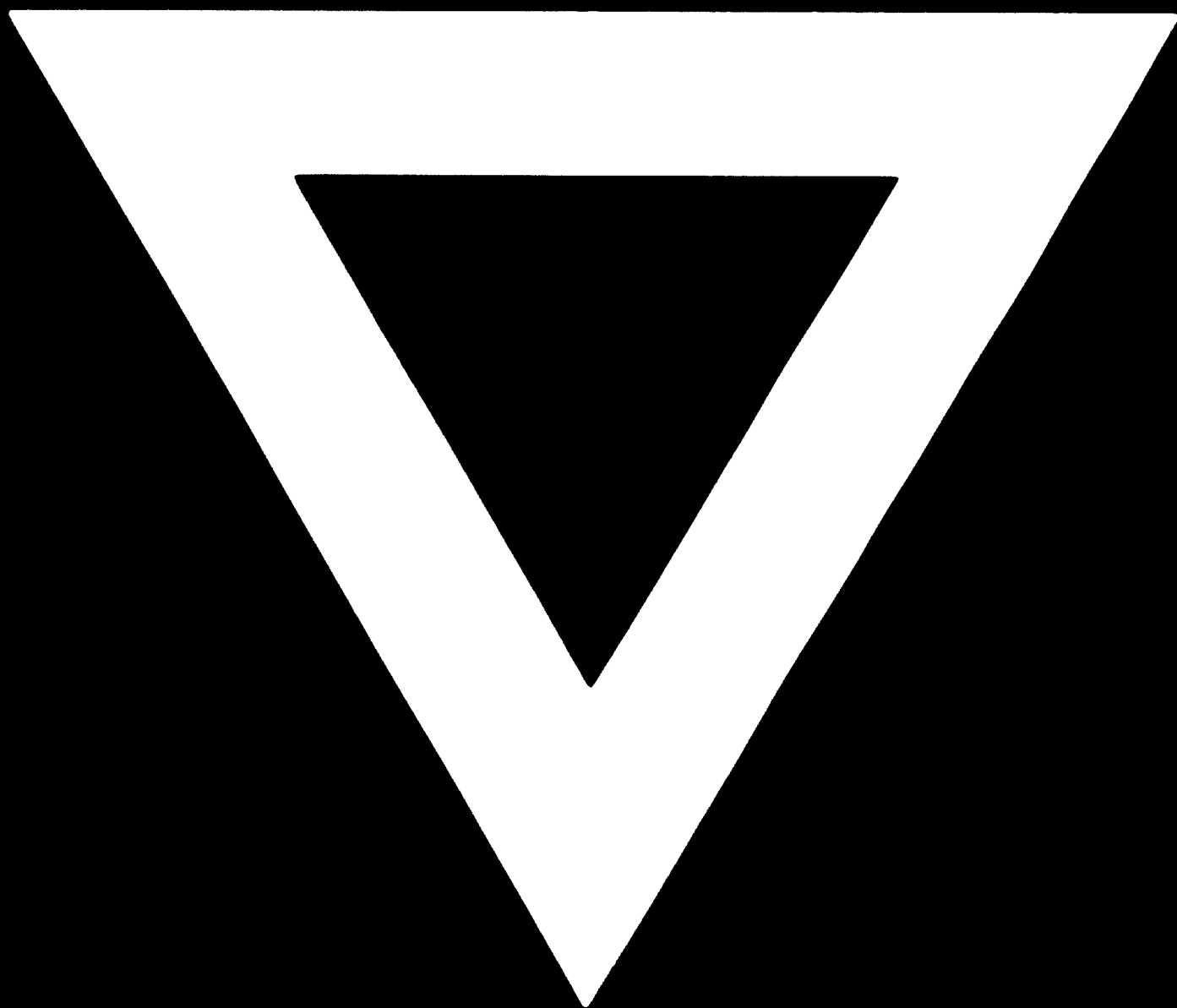
DUTIES: The expert will be attached to the SIPAD Design Centre. He will be responsible to the National Project Director and will, in collaboration with SIPAD Design Centre's Yugoslav staff and the designers attached to the various factories, design new upholstered furniture. He will work in the factories receiving assistance from the design teams. Specifically, the expert will be expected to:

1. Design furniture for both home and institutional use, collaborating with the staff of the SIPAD Design Centre and staff of the Standard factory in Sarajevo, Majevoica factory in Brčko, Buduonost factory in Bosansk, Samao to complete the upholstered line designed in the first mission;
2. Assist the team of the Design Centre in the design and development of themes for SIPAD furniture exhibitions;
3. Train counterparts in the above-mentioned fields;
4. Advise SIPAD management and factory management in the above-mentioned duties on an ad hoc basis.

The expert will also be expected to prepare a final report, setting out the findings of his mission and his recommendations to the Government for action that might be taken.

QUALIFICATIONS: Architect or furniture designer with considerable experience in the design of upholstered furniture. Familiarity with the latest design and technical development necessary. Experience in design for export desirable.

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