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# ERGONOMICS REPORT

# STEADYGUM CAMERA SUPPORT. SHOULDER CAMERAS

## Extract

**Risk prevention and labor welfare department.**

**Labor risk and workplace safety prevention unit.**

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## 1- OBJECTIVE

The purpose of the report is the analysis of the ergonomics of a supporting camera device called steadyGum during the cameraman services requested by the Comité General de Seguridad y Salud (General Committee of Security and Health). Its objective is to identify and estimate the ergonomics incidents that could happen while using this device. Additionally, it aims at improving work conditions and making it healthy and safe.

## 2- METHODOLOGY

To prepare this report the following methodology was applied:

o According to the regulations and recommendations summoned and following the guidelines founded in the already mentioned regulations as a base to justify the proposed measures.
o All the data have been raised from the following work centres: Prado del Rey, Torrespaña, Sant Cugat, (Territorial Center) T.C. Andalucía, T.C. TVE Aragón, T.C. TVE Valencia, T.C. TVE Galicia/(Informative Unit) I.U. RNE Santiago de Compostela, T.C. RNE Galicia/I.U. TVE A Coruña and the I.U. from Algeciras, Huelva and Castellón. Collection of the data was made in different phases:

- Making tests of the camera support being on live or simulations in the work centre performed by volunteers camera operators.
- Inspection and image recording was made during the tests. Workers and cameramen were interviewed during the tests.
- Confidential assessment questionnaires related to the ergonomics were given to the workers that took part in the tests.

**Evaluation of Ergonomics risks ERGO-IBV (Instituto de Biomecánica de Valencia) is the employed methodology that has been approved by the General Committee of Security and Health by the application of the REBA Unit that values the postural loads.**

## 3- FIELD RESEARCH

Before visiting each company all the departments involved were contacted and explained the situation. Additionally, we spoke to every labour risk leader of the General Committee of Security and Health.

### 3.1 - DATA COLLECTION

59 cameramen have participated to prepare the sample of this report.

Out of all participants, 8 of them were women which stand for 13.6%. Thanks to these percentages we can conclude that the cameraman working population is divided into 9.3% for women and 90.7% for men.

## 4- EVALUATION

To test the ergonomics of the camera support we have employed:

**Assessment questionnaires:**

To value every ergonomic aspect we offered 5 possible answers (Always, frequently, sometimes, rarely, never) that represent opinions of the camera operators.

**ERGO-IBV Methodology, REBA Unit:**

Reba method (Rapid Entire Body Assessment). This method values around 600 postures of the upper limbs, arms, forearms, wrists, hands, trunk, neck and legs; the method considers as well the weight of the object and the strength, the kind of grip and the kind of muscle activity. This method is the most complete for this kind of activity.

## 4.1 - ASSESSMENT QUESTIONNAIRES. RESULTS OBTAINED

| Population / Aspects of ergonomics | General (59) | Sant Cugat | Prado | Territorial Centers and Informative Units | Torrespaña |
|---|---|---|---|---|---|
| *In relation to work:* | | | | | |
| The use of this device makes it easier to hold the weight of the camera. | 94.83% | 93.75% | 100% | 92.31% | 100% |
| While using this device you can perceive the distribution of the weight through the trunk, avoiding a possible overload in a particular area. (For example a shoulder) | 94.92% | 100% | 75% | 96.30% | 100% |
| This device allows movements with the camera. | 89.83% | 100% | 75% | 85.19% | 100% |
| This device allows adopting frequent positions during the work. | 88.14% | 81.25% | 87.50% | 88.89% | 100% |
| *In relation to the device:* | | | | | |
| The device is comfortable. | 91.53% | 93.75% | 87.50% | 88.89% | 100% |
| The device is light. | 100% | 100% | 100% | 100% | 100% |
| The device presents fitting parts to adapt it to the characteristics of a different kind of person. | 93.10% | 100% | 75% | 92.31% | 100% |
| It's easy to handle the fitting mechanisms. | 91.53% | 100% | 87.51% | 88.89% | 87.50% |
| The way to place the device (harness) is simple. | 98.31% | 100% | 100% | 96.30% | 100% |
| The camera fitting system is comfortable and simple. It allows to fasten or to take it off easily. | 94.92% | 100% | 100% | 88.89% | 100% |
| The device allows adjusting the manipulation camera height easily without pulling it. | 87.93% | 93.75% | 57.14% | 92.50% | 87.50% |
| Does it allow carrying the camera in different heights? | 74.47% | 81.25% | 75% | 84.62% | 75% |

## 4.2- IMPLEMENTATION AND REBA METHOD RESULTS

To evaluate the REBA method we kept a constant weight value with and without the device as it would represent the real weight carried by the cameraman. Even though it reflects the worst situation for the worker, we should consider that using the device the weight of the camera will be distributed between the shoulders. In this way overloading and overcharging only one side of the body is avoided.

When it comes to the weight, we considered two situations:
1. The weight of the camera + attachments > 10 kg (RF) which is the least favourable situation for the camera operator.
2. Weights between 5 and 10 kg.

## 4- RESULTS

ASSESSMENT QUESTIONNAIRES.

*In relation to work:*

**It is found that a higher percentage value is related to the two first ergonomic aspects: the support helps to hold the camera and the worker realizes the distribution of the weight. Among the comments written in the questionnaires and among the interviews the workers expressed that they noticed the distribution of the weight between the shoulders.**

*In relation to the device:*

**100% of the answers confirm that the device is light. Thanks to the information given by the workers we can say that the device can be carried easily and its volume is not a problem.**
**The assessment percentages show that the device is easy to place/wear and their adjustments are not complicated and intuitive. The values are between 96% and 100%.**

## REBA ANALYSIS

**After having observed the analysis of different positions with the support (with or without Steadygum) we conclude that the use of the support allows resting one or both arms.**
**In relation to the positions used during work with the camera located at the level of the waist, we conclude that the camera is kept even closer to the body and the deflection of the trunk is lower, obtaining in that way a higher assessment of the position.**
**The positions that allow a vertical camera use have been valued with the support and we conclude that it follows the shape of the body.**

**Risk prevention and labor welfare department.**