



## Can We Do Away with Service Qualitative Requirements?



Brigadier **MKK Iyer**, SM (Retd)

*Many a case of acquisition has fallen due to faulty or unmatchable Services.*

Qualitative Requirements

A business dictionary defines Qualitative Requirements (QRs) as follows: 'In contracting, quality of design specifications defined in narrative form to be later translated into numerical values'. In procurement parlance in the Services, it could be termed as the General Staff Qualitative Requirements (GSQR), Air SQRs or Marine SQRs. In general, it could be termed as SQRs as given in the Defence Procurement Procedure (DPP) Manual. SQRs are evolved and promulgated to *specify essential parameters of military equipment needed* in order to fulfill other operational requirement and in the procurement parlance, to fill a necessary equipment void. They spell out the users' requirements in terms of functional characteristics in a comprehensive,

### Key Points

- The need for Qualitative Requirements (QR) for any equipment for the Services.
- The importance of QR in the Acquisition Procedure in India.
- The procedure followed in countries like USA, UK and China.
- A look at how the QR can be made more amenable to changes after the issue of Request For Proposal stage.
- A few recommendations to improve the system.

structured, and concrete manner. In other words, they define *minimum performance attributes*, corresponding to the task or tasks to be performed by the system. SQRs are the basic foundation of the procurement process. In other words, it is the starting point. SQRs form the basis of equipment philosophy and are generally need based. However, they could also be generated as a minimum acceptable specification for equipment, based on what is available world over or within the country.

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Website: [www.claws.in](http://www.claws.in)

Contact us: [landwarfare@gmail.com](mailto:landwarfare@gmail.com)

It would not be wrong in saying that they are certainly a ‘wish list’ without being a ‘wish list’. They apprise the vendors about what is being sought and provide a well-set benchmark for subsequent inter se appraisal of equipment tendered for evaluation by different vendors. Therefore, it can be concluded that the formulation of SQRs is an important stage of the entire process; a highly deliberate and meticulous approach has to be adopted while determining them. SQRs therefore should be a balance between what is feasible and what is required. SQRs generally depend on current and anticipated technology levels, enemy capability, plans and tactics, need for equipment to counter the same, own operational doctrines and plans, and also most importantly the pattern, climate as well as place for fielding of the equipment. Therefore, one aspect which is clear is that poorly conceived and imprecisely drafted SQRs will create confusion, lend themselves to misinterpretations, compromise quality of equipment, prove expensive, and cause immense delays.

In the Indian Armed Forces, the SQRs are laid down by the Services themselves although in the year 2016, this procedure has been given a lot of attention. It is said that the practice of asking the Services to evolve SQRs of equipment sought is a legacy of the Second World War. It is also said that it is too rigid and does not cater for changing technology. But recently, it has now been mandated that a Request for Information (RFI) has to be issued prior to preparation of SQRs. Therefore, although the latter aspect of catering for ‘latest technology’ has been taken care of to a great extent, but the former part of being ‘too rigid’ still remains to be implemented. Most of the developed countries have already adopted different procedures according to the level of technology mastered and the maturity of their indigenous defence industry. Is there a case for technological prowess available to be proven based on which the Services will decide whether the equipment suits them or should the Services be continued to be allowed to evolve the SQRs? The United States has already applied this change a decade or so ago and they have evolved the Advanced Concept

Technology Demonstration (ACTD) as the method. Thus, it is left to the field units to determine whether the equipment offered meets their requirement or further developmental work is required. In this methodology, it is not the military that demands development of new systems ab initio. Advantage is taken of the nation’s technological prowess to tell the military as to what equipment can be made available. Thus, time taken to develop new technologies according to the military’s requirements is eliminated. It also removes any over ambitious or impossible SQRs. Similarly, China asks its defence industries to manufacture a prototype and field it for use with the field units. The units are then requested to utilise the equipment and come out with the improvements required and thereafter the industry creates a Mark II version for further utilisation. These are different examples of methods of SQRs in different countries. In the United States, the industry prowess is demonstrated and in the Chinese model, the efficiency is based on what is available. The British have a similar procedure based on important qualitative requirements called as the Cardinal Points. In the Indian scenario the present capabilities of private and research organisation does not allow to implement the methods followed in the United States due to existing prowess in research and development (R&D). Therefore, in most of the cases the RFI route to SQRs is possibly the only route, especially so, when the ‘Make’ category of Defence Procurement Procedure has been hardly utilised and a better method of ‘Strategic Partnership’, at least on paper has now been mandated. Can these models be replicated in India? Well, unless and until the industrial prowess is of the stature of Indian Space Research Organisation (ISRO) of India, this may not be feasible.

However, after having established the need for the formulation of a SQR, we keep reading in reams of printed paper and on electronic media, that the cause of delay in acquisition is the SQRs. In fact, a recent case of Air Force helicopters to ferry VIPs was in news for revised SQRs after which it became an irrevocable rule in the Acquisition Wing that SQRs will not be revised. So if the villain of delays is the SQRs can it be discarded?

The unambiguous answer that comes to the mind of any person in the acquisition process is a definite 'No'. The reason for the definite requirement is that without a SQR, how can two or more equipments produced by different or even the same vendor be judged? Alternately, if it is a new requirement, how can an equipment manufacturer design such equipment? Finally, in the process of lowest bidder (L1), the manufacturer who spends the lowest by giving the bare minimum may also not provide the equipment required by the user. Therefore, how can the SQRs be retained while also ensuring that the user gets what is required for capability building. It has no easy solution but a beginning can always be made. One of the suggestions put forward is to have what is called as an Operational Requirement (OR) as is in practice in the United Kingdom. This would mean that an OR would have basics of equipment like 155-mm calibre in case of a gun, to be on towed platform with possibility of being self-propelled and able to fire up to a particular range with appropriate existing ammunition or proposed special ammunition and operable in plains, deserts and mountains. If such an OR is provided, there are many vendors who would produce an existing gun readily and the selection process could be quickly started with most reaching the stage of commercial negotiations if found fit in the evaluation trials. There may not be a need for technical evaluation process, but then how will the advantages and disadvantages be considered in each of the equipment in the present process where there is hardly any encouragement to technical excellence of equipment and is totally dependent on lowest bidding. Well this could be an additional factor during trials where a committee of experts can bring out the technical excellence in an equipment fielded by a vendor with advantages emerging from that particular feature. However, such ORs are meant for single vendor situations like a 'Make' process where the the Defence Research and Development Organisation (DRDO) or the Ordnance Factories Board (OFB) or a single identified private vendor is given a task of manufacturing an equipment. China to a great extent follows this process where the first equipment produced

by the manufacturer is allotted to a unit along with some technicians and designers who stay with the user and utilise the equipment for a year or so in all terrain where the equipment would be eventually fielded. Thereafter, the equipment Mark II is produced and again fielded. Such a process is feasible for a new equipment being designed but may not be suitable where it is easy to procure existing equipment rather than re-invent the wheel. What can be done to ameliorate the existing delays, goof ups in making SQRs? The solution is to first go into details of RFI from national and international vendors and get down to the minutest details and thereafter formulate the SQR. Another way is to follow a bottoms-up approach in which initially only 'baseline standards' are evolved for a large variety of military equipment. These standards are grouped together to form 'basic profiles'. For example, if an air defence missile is required, a particular range and capability should be kept as a basic profile. Thereafter, these could be converted into Short Range Surface to Air Missiles or Quick Reaction ones depending on its usage. These, in turn, help generate broad equipment contours with distinct characteristics. Profile of equipment, when translated into specific distinctive requirements, is called a 'functional standard'. A functional standard is thus a document that lays down the parameters for the development of equipment. In other words, baseline standards are like building blocks, which are common to a large array of military systems. These are combined to get basic profiles of a range of equipment, whereby profiles get converted into functional standards to define a military product. Thus, when we have a chassis of a vehicle, it can be converted into a pick-up or an ambulance depending on where to use it.

Today, manufacturers, especially the private companies, are in a dilemma. Can they tie up with an Original Equipment Manufacturer (OEM)? There is no harm nor does it require much effort in terms of licences and other red tape matters. Then why is it that the OEMs who are otherwise ready to sell to the Defence Services shying away? The major reasons are two. First, will they be able to export or sell items produced in India to the

Indian Defence Forces? They may not because it may not be meeting the requirement of the QRs laid down for the equipment. Let's take the case of Very Short Range Air Defence System (VSHORADS). In case one OEM ties up with an Indian missile manufacturer, even a Public Sector Enterprise (PSU), the product although world class may not be successful in trials as some parameters may not meet the QR. It actually does not matter to the trial team whether the missile has hit the target every time but if it does not meet a particular requirement say weighing more by 500 or 1,000 gram, the equipment will be rejected. This is so due to the fact that the weight is specific and not in terms of a range in the QR. The Spirit of DPP and the spirit in which a QR is made is forgotten and the DPP and the QR are actually taken as the *gospel*. The second reason is will the companies be able to sell to a different country by the way of export? The answer may not be in the affirmative. This is due to the reason that in terms of trial evaluation, many countries take Indian trials seriously. If an equipment clears Indian trials, there is a great chance that it will sell abroad or it is so believed. Therefore, if the equipment is not in use in the country where it is manufactured, what are the chances of its export? I would leave it to the readers to make a guess. Recently, there was a news regarding tying up of OEM of F-16 aircraft with Tata Group. It is a decent development in terms of 'Make in India' but what would be the prospects of the sale within and outside, especially of an aircraft which was not favoured in the Multi Role Combat Aircraft trials and which is being operated by Pakistan for the last three decades is still to be seen. Another major reason is the cost incurred in the process of manufacture in India. Will the OEM grant all the technical aspects of technology? Will it be more of build to print (BTP) or build to specifications (BTS), the latter being more beneficial to India? These are the various aspects which finally lead to sale of the equipment to the Indian Armed Forces and that again goes back to the QRs. Therefore, there is a necessity to keep the QRs minimal and what is of essence without letting it to be generic. A serious interaction by the Services at the time of formulation of

QR with the various OEMs would unquestionably be constructive.

In India, the Services have had their share of bad publicity, and to a great extent the criticism has been valid. The critics say that in the Indian Service Headquarters, available books on the equipment and catalogues of the manufacturers are collected. The best characteristics of known equipments are compiled as requirements with a tendency to include as many features as possible to demonstrate the enormity and exhaustiveness of the work done. It was even said that the Indian Defence Services needs a combination of Tarzan and the best Bollywood actresses in each and every equipment QR. Well, this may have been so earlier, but today RFI is mandatory and the matrix of responses from the vendors gives a huge input to the preparation of SQR. Thereafter, the SQR goes through vetting by atleast four agencies before it is fielded in a collegiate (General Staff Equipment Policy Committee) headed by the three star General or equivalent head of procurement of each Service. In cases where commonality of equipment exists and standardisation of QRs is merited, a Joint Staff Equipment Policy Committee is constituted, with representatives of all the three services to formulate Joint Services Qualitative Requirements. It may be true that the SQR still may have some characteristics which are difficult to achieve and may have difficulty during trials later. Therefore, the argument that some lenience regarding the deviations in the SQR after trials could be considered by the highest decision-making body. Also, during the collegiate, insisting on adding additional features to the SQR which needs to be curbed. The case of formulation of a QR for a helmet is a case in point. Further, it is very important that the officers who draft SQR have to be knowledgeable not only in their respective field but also in terms of procurement procedures. Sometimes, to pad up, the SQR contains parameters which may not be achievable or creates impediment in the trials. Certain parameters may not be interpreted in common usage or universally accepted parlance. For example, it is very difficult to evaluate the term 'state-of-the-art'. There could be cases where the SQR was approved in 2004 and

the meaning of state-of-the-art in 2014 may be totally different. Another important aspect is that of introducing a particular feature in the equipment QR which in turn may increase the cost. Therefore, a cost benefit analysis needs to be considered prior to the formulation of the QR. These are the concerns which an officer or a team with knowledge of procurement process can only be expected to carry out which can come about with longer tenures of officers. Then, there is the aspect of overall cost which also needs to be considered during the preparation or discussion of a SQR. Further, there needs to be a provision to check and acknowledge a better feature in a particular equipment as the final decision is made on the lowest bidder. Interestingly this has been introduced in the DPP 2016 and is a good start, but there has to be more reforms here. It is universally known that the cost versus feature inclusion is a geometric progression factor and not linear. Therefore, SQR formulators must consider the actual need for a particular feature. For example, a man portable missile can function without radar associated with it if the radar only provides early warning and does not guide the missile on to the target. In case the cost is prohibitive and it is easier to procure the missile without the radar such consideration should be either in the SQR or it could be revised later, which presently is not the case due to rigidity. The Service HQs must put in only primary functional parameters in the SQRs. Alternately, like in the case of Buy & Make (Indian), all SQRs should be PSQR which could be later revised. If the performance parameters are broad based, it helps in easier procurement. Yes there is a danger that the vendor could compete with minimal features but this can always be factored in during trials. Basic equipment also, if acceptable to the Service HQ, should then be utilised with technology transfer and further R&D by the DRDO or private vendors to make its further upgrades rather than starting from scratch. Deviation after the issue of RFP should be introduced in the DPP on SQR issues to allow shorter time frame for procurement. A study of all the cases which were retracted will give an idea that most of the cases were due to non-compliance of SQRs.

There is also another way of formulating SQR parameters and that is to have a band in specific features like rate of fire, weight of the equipment, speed, etc., where it can be from so and so figures to so and so figure. This gives a band for the vendor to be compliant rather than the present single figure found in most of the parameters in SQRs. Therefore, SQRs could be a mix of specific parameters and a band of parameters so that there is a limited flexibility available both for the vendor and the buyer. This is being commenced with in recent cases. Also, most important, the trials which are required by the Quality Assurance (QA) agency should be factored in so that all the tests given in the JSS-55555 or such standards are not sought from the vendor. A line in the SQR that the tests under JSS-55555 will be decided by the user, QA agency, and the Weapons and Equipment (WE) Directorate at the RFP or in the trial methodology is adequate to ensure there is no need for unnecessary tests.

Finally, reiterating the flaws and suggested solutions for better SQRs:

- (a) Formulating SQRs is a specialised task which calls for officers who are knowledgeable, regarding availability and requirement of various technologies. Therefore, selection of these officers should be due to demonstrated competence. If not, they would remain untrained and ill-equipped for the task.
- (b) Irrelevant, unverifiable, and non-essential parameters should be avoided. Too many minor details are actually not required in the SQR. These can be added into the RFP or the trial directive later. Words like 'drivers and operator's comfort', 'state-of-the-art', 'compact', 'strong and sturdy', etc., are some words which are non-verifiable and must be avoided.
- (c) Cost of each technology being sought should be weighed against requirement and this should be factored in the SQR.
- (d) Language of the SQR must be universal and easily understandable and interpreted by vendors and the trial team alike so that multiple interpretations are

- not possible. Factors like temperature and weight could be in a band rather than being specific.
- (e) SQRs should not be wish list for the future keeping the procurement time which takes from 2 to 6 or 8 years. Also, provisions for upgrade or better technology could be considered in SQRs.
  - (f) Padding or increasing the written portion in a SQR, which could be a tendency by every higher level officer to add something new, should be avoided.
- SHQs must not work in water-tight compartments and regular interaction on SQRs between officers of each Service must take place.
- (g) The idea of leaving the proposal to categorisation to Services Capital Aquisition Plan Categorisation Higher Committee (SCAPCHC) or Defence Acquisition Council is also a good idea and must be considered. The SHQ should only forward the statement of case with the SQRs.

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**CENTRE FOR LAND WARFARE STUDIES (CLAWS)**

RPSO Complex, Parade Road, Delhi Cantt, New Delhi 110010

Tel.: +91-11-25691308, Fax: +91-11-25692347, Email: [landwarfare@gmail.com](mailto:landwarfare@gmail.com)

Website: [www.claws.in](http://www.claws.in)