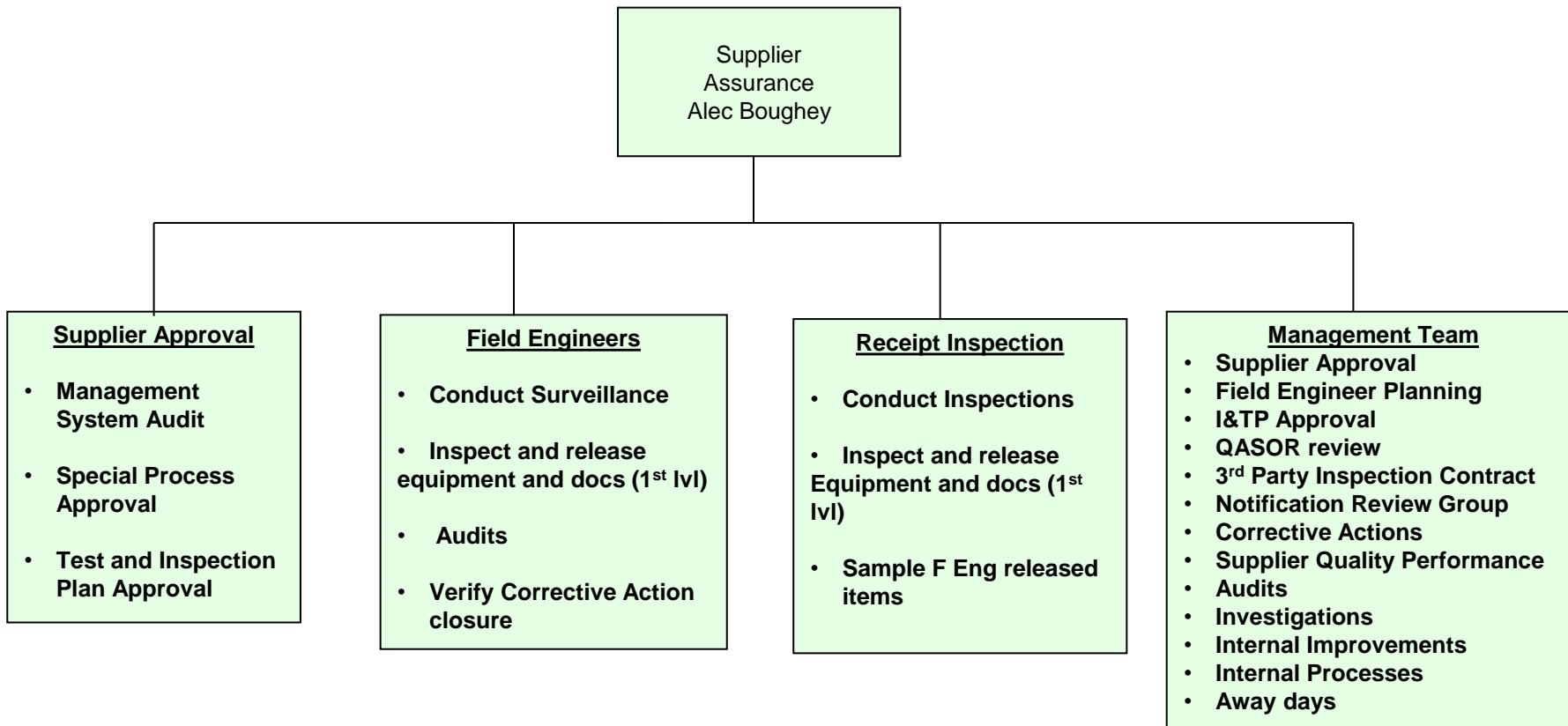


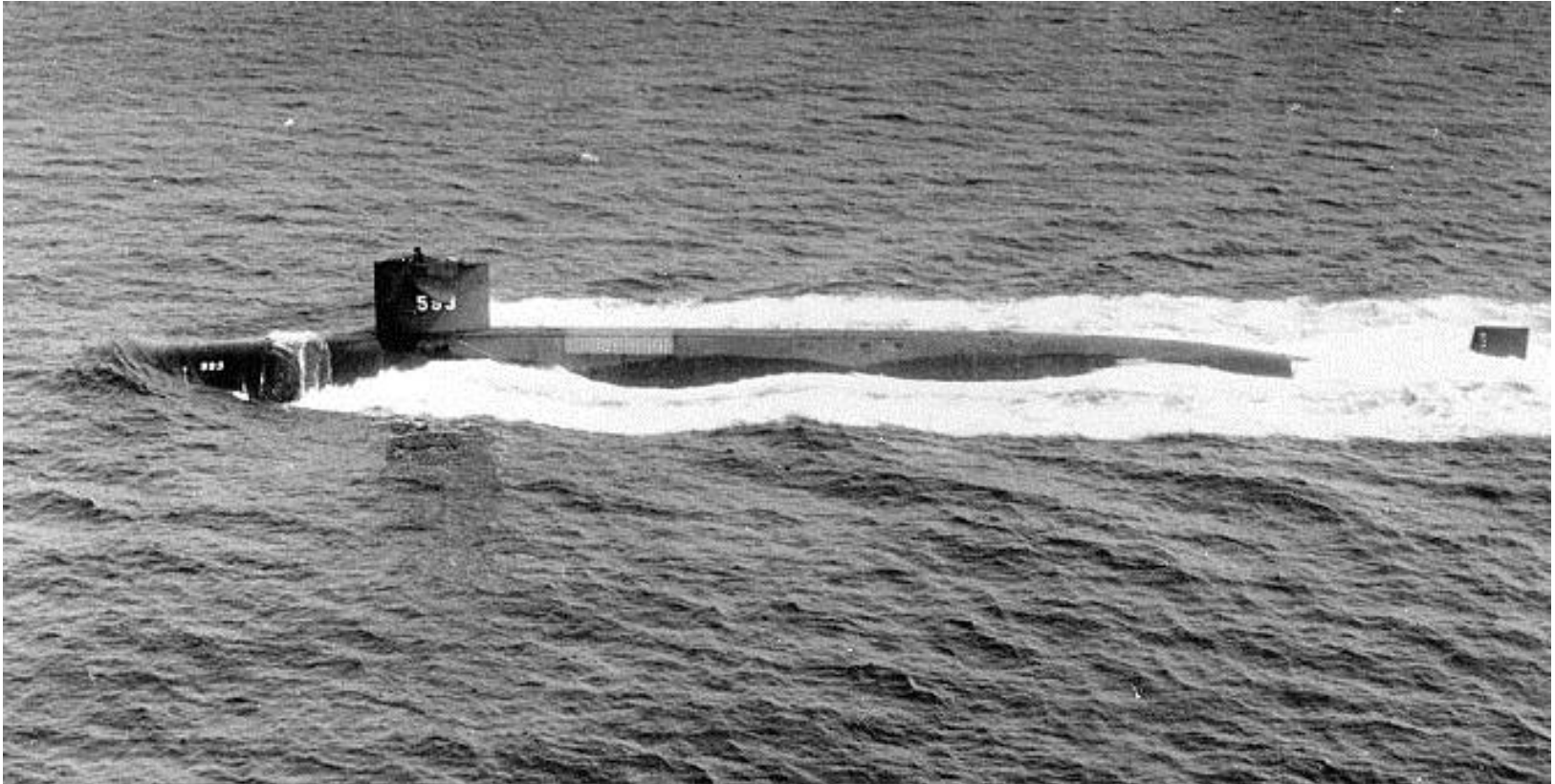
## **Part One - What is Supplier Assurance?**

- Part of the Safety and Quality Assurance Directorate
- Supplier Assurance is the face of BAE Systems Quality Control & Assurance deployed in the supply chain
- The principal role is to ensure Suppliers have robust quality management systems in place and deliver a product that conforms to submarine requirements

## Supplier Quality Assurance – Organisation / Process



# MoD Inspection Requirements SSCP25



**2 Categories: Submarine First Level & Unclassified**

## Inspection Categories - SSCP25

All equipment is allocated a quality code which is dependant upon it's importance within the submarine; guidelines can be found in SSCP 25

**REDP** = Submarine First Level Quality / Test & Inspection Plan and QASOR Item (Quality Assurance Statement of Requirements)

**REDQ** = Submarine First Level QASOR Item

**AMBP** = Quality / Test & Inspection Plan and QASOR Item (Quality Assurance Statement of Requirements)

**AMBQ** = QASOR Item

**GRES** = Standard Item

**GREO** = Proprietary Item



Success teaches us nothing; only Failure teaches.

Detail – The man in charge must concern himself with details. If he does not consider them important, neither will his subordinates. Yet “the devil is in the details.” It is hard and monotonous to pay attention to seemingly minor matters. In my work, I probably spend about ninety-nine percent of my time on what others may call petty details.

Most managers would rather focus on lofty policy matters.

But when the details are ignored, the project fails.

No infusion of lofty policy matters can then correct the situation.



Adm HG Rickover

## 7 Step Corrective Action Process – Overview - Alec Boughey

- As part of Supply Chain NRG – observed repeat NCs / defects by suppliers
- A review of existing Corrective Actions over relatively long timeframe i.e. 2007 to 2011 also indicated a lack of effectiveness in prevention
- Why repeat failings?
- From a brief review of our NC records (TIP QA CA Module) it proved difficult to know
  - What had changed
  - What corrections had been implemented – if any at all
  - How effective they were - until too late
- Conclusion: To improve - something needed to change
  - We needed a more effective corrective action process

## 1 Define Problem

- The NRG is the initial step in reviewing notifications and identifying Corrective Actions
- Good problem definition is very important to understand the problem
- We need a clear description
  - Including all data – people, times, serial numbers, Test Specs, operating conditions etc.....
- BAE Complete this section

## 2 Contain Problem

What it is:

- Ensuring that all potentially affected parts have been traced and quarantined
- Sometimes this is an N/A as there are low numbers of product other examples are important eg First level fasteners.
- We do request a time frame for a response from Suppliers

Why it is Important

- Keeping the customer supplied with conforming parts/products
- Quality Issues not contained can be safety related
- Containment tends to **fail** where: *Parts, documents or data have been missed (i.e. in transit, another store area, on someone's desk (or e-mail), so ensure you have a thorough list of parts to find*  
*The quarantine is not a locked environment with a controlled key*



## 3 Find root cause of escape

- Here we ask what has failed in the suppliers Quality Control
  - This can provide a very useful insight into why it was missed
- The supplier must establish this and inform us which inspection process failed to detect the problem

Typical tools used, be aware of them and look for their use and application:

- Time Lines
- Cause and Effect Diagrams
- Root Cause 5 Whys

Why we prove the cause

- To provide confidence and assurance that the real root cause of the escape has been identified

## 4 Prevent further escapes

- Supplier identifies solutions to the previous lack of quality control capability
- Solution should be tested and proven to remove the symptoms
  - How often is an action closed on the strength of an action to...?
  - Are all processes fully updated? Is there a control plan?
  - Is a compliance audit planned? If not why not?
  - Has the change in process been communicated?

### 5 Find root cause of problem

- Find the cause of the problem
  - Brainstorm, Design Review Meetings, Cause and Effect, 5 Whys
  - Prove the cause – rare problems may have a series of causes which cannot be reproduced:
    - e.g. Concorde accident – strip of metal bursts tyre, lump of tyre ruptures fuel tank, fuel leaks, ignites and aircraft crashes.
    - e.g. Nimrod accident – O Seals Spec changed, No QC, No Tests on Product, System known to leak No CA, Inadequate A/C Sys Testing, Modifications implemented, plus poor Safety Management, A/C refuelled in flight fuel leaks on exhaust system.
- Logical Analysis is required for identification of all potential and actual causes to be determined and fully proven



## 6 Implement corrective action

We are looking for:

- Potential solutions evaluated
- Evidence of completed actions
- Best Solution determined
- Solution tested and proven
- Plan for implementation
- Solution implemented

Finally

- A permanent fix to eliminate the cause of the problem
  - Use of mistake proofing (Poka Yoka)

## 7 Verify fix

- Form is returned to BAE and reviewed
- Some may be sufficient to close – others return, or conduct 7a verify at site.
- Key Activities
  - Audit of Suppliers new processes and procedures
  - Audit the investigation confirm all 6 steps have been robustly completed
  - If the problem solving project is worthy of sharing, capture in best practice folder – PIRs / Chairmans Award.

# Questions and Answers