Yemen LNG Project

The Technical Training Story

Phil Campbell, HR & Admin Manager,
April 2005 – September 2009
Today’s themes

• Background to the Yemen LNG Project

• Training and Yemenisation - Overview

• Success Factors & Essential HR Lessons…

• (Backup slides: Recruitment, Compensation & Benefits, Cultural training…)
The HR Trainee Campaign Team

The Trainee Recruitment team:
5 males, 5 females, 5 nationalities.
Background - the Yemen LNG Project

• Launched in August 2005, after ten years of pre-planning, postponement and review.

• A critical project for the economy of Yemen: $30-50 billion in revenue / royalties over the 20+ year lifetime of the project.

• Startup of Train 1 scheduled for late 2008, with Train 2 on stream in 2009. Capacity of 6.7 million tonnes p.a. of LNG, for 20 - 25 years.
Yemen LNG Company comprises the following seven shareholders:

- **39.62%** TOTAL Yemen LNG Company, Ltd.
- **16.73%** Yemen Gas Company (YGC)
- **6.00%** Korea Gas Corp. (KOGAS)
- **17.22%** Yemen Hunt LNG Company, LLC
- **9.55%** SK Corporation
- **5.88%** HYUNDAI Corporation
- **5.00%** General Authority for Social Security and Pensions
The Yemen LNG Project - Objectives

- Build a 2-Train LNG plant, in a remote and challenging environment.
- Lay a 320 km pipeline, from the Marib desert to the Gulf of Aden.
- Find, recruit and train 700 permanent (Yemeni) staff and 500 subcontractor personnel, 2006 – 2010.
- Achieve 90% Yemenisation by the end of 2015.
Yemenisation: 2007 - 2015

The model projected 90% Yemenisation on target in 2015.
Why develop Nationals at all?

- Essential to the long term economics of the project. No major project can support expat staff costs indefinitely.

- Yemenisation: Mandatory under the Gas Development Agreement, and Yemeni Labor Law (min. 90%).

- A moral obligation in a country with 40-50% unemployment.

  - An outstanding challenge, a “business showcase” for future projects - and a very high priority for the international lending community.
Yemenisation - The Skills Gap challenge

- **Reasonable** supply of Yemenis available for most “Support” posts (Admin, Finance, HR, IT, ..)

- But – national educational system crumbling under population pressure.

- A very small pool of skilled technical candidates (c. 2,200 oil industry jobs in the entire country).

Insufficient expat staff available from the partners, and fierce international competition for technical talent.
What is different about LNG?

• The scarcity of expertise. Only c.20 LNG plants worldwide, with several under construction.

• Different technologies – API, Fin-Fan, Cryogenics, transportation characteristics, LNG itself, and the control / containment methods.

• The technical competences required – they are a step up from “standard” oil & gas production.

• The behaviours required, to work in a multinational team (70 nationalities) with high percentages of “first time” expats. This was true for all of us.
Plus - Pressure to Fast-track “isation”

- Heavy pressure from Government to “Yemenise” very fast – much more so than for previous energy companies. Repeated requests for 90% Yemenisation by end 2012.

- Constant pressure from influential individuals / groups to employ family / friends - regardless of their ability. (A perfectly reasonable request, in Yemeni culture.)

- Frequent incomprehension of the technical complexities.

Widespread mistrust of our “Yemenisation” timescale and honesty – based on previous experience.
The Options

1. Flood the project with expatriates, Yemenise later…
   *Unacceptable politically… and insufficient expats available…*

2. “Poach” staff en masse from the oil industry in Yemen …
   *Unacceptable on ethical and practical grounds…OR…*

   - Repatriate as many skilled “Expat Yemenis” as possible,
   - Recruit semi skilled Yemenis *in-country*, wherever we could
   - Train them *ourselves* to the standard required,
   - Recruit “Non Yemeni” expats for *Instructor & Supervisory*
     posts where necessary - *on temporary contracts* – and…

3. *Launch a major technical training scheme* to fill *every*
   Operator / Technician post – and 50% of Panel Operator
   posts – with young Yemenis *trained from scratch* by us.
Our Solutions – Training & Diversity

• **Internationalisation** – we brought in contractor expats where necessary… around 70% were “non-Western”.

• **Education & Training** – we incentivised the transfer of knowledge: termination bonuses for “early Yemenisation”…

• **Repatriation** – we repatriated Yemeni engineers – with mixed success – some were a positive influence, some not…

• **Feminisation** – we tapped into an undervalued resource, and helped to demonstrate their potential for the country.

**Regionalisation** – we recruited from every Governorate of Yemen – essential, in an intensely tribal environment.
Trainee Recruitment Campaign – In brief

Target: 200 technician / operations / panel trainees, to be ready to run the plant from the end of 2008/9.

Strategy: Find the best in Yemen, from all 20 Governorates. Impartial, with No Quotas. All eligible Yemenis welcomed.

Method: Mass advertising campaign: radio, TV, Press. Application forms distributed in national newspapers (no dependable postal system in Yemen).

16,000 applications (+ 2,000 duplicates)
5,800 tested
500 shortlisted & interviewed.
194 recruited, in 3 intakes.

(4th intake (43) is about to start training)

Press and Billboard Adverts, Nov. 05

Female candidates applied to us but refused to consider site-based jobs, or shift-working.
Trainee Recruitment - Testing

Aden Test Centre, 28 January 2006, 440 candidates.

We tested the 5,800 most promising candidates, on one day, in 7 different centres, using local language training companies to assist, to ensure that the test was confidential.
The Results paper gave an immediate “snapshot” of strengths / weaknesses - and highlighted any tendency to “guess”.
The Panels comprised an Arabic speaker, a member of HR and an Operations / engineering professional… plus a Yemeni psychologist who was the only member with an overall right of ‘veto’ over candidates.
Additional Intakes of trainees will be recruited every 2-3 years
Training Timetable – “Made to Measure”

Batch 1 A 87
P.T.P
6 Groups
15.04.06

Batch 2 A 46
J.T.P
3 Groups
01.07.06

Batch 2 B 62
P.T.P
4 Groups
04.09.06

Batch E 30 (to be revised if necessary)
T.D.P
2 Groups
Selection & Recruitment
Refresher Experienced Personnel

Batch 3 A
P.T.P
If required to cater for Operation Division requirements
3 Groups

Fire-Fighting Team (TBA)

Secretarial Training 15
1 Group

TOTAL

Milestone
Milestone 2
Milestone 3

English + Fundamentals
Technical English
Oil & Gas Technology
OJT
Specific + YNGL
OJT abroad
Transfer to Production Division

During OJT a mix of Operations Supervisors & Instructors

Trainees with 'proven' technical competence will "immigrate" to Common Course. Weaker trainees will follow

Warehouse, workshops, Maintenance Junior positions, Technical Clerk...

Pre-com / Comm. Utilities
"Training by Superintendents with assistance from Training"

Office Courses

(Computer, filing, OJT @ office etc)
The LNG Syllabus – Developed “in house”

Disciplines

- **PROCESS & HSE**
- **ELECTRICAL**
- **MECHANICAL**
- **INSTRUMENT**

**Classroom + Simulator (July Version 1)**
- Workshop + Classroom
- Workshop + Classroom

**Workshop Form**

- **Name**: [Name]
- **Module**: [Module]
- **Job**: [Job]
- **Workshop Equipment**: [Equipment]

**General Assessment**

- **BEHAVIOR**
- **GENERAL KNOWLEDGE**
- **SAFETY AT WORK**

**Sample Code**

- **Code**: [Code]
- **Objective**: [Objective]
Technician Training – Overview

Candidates selected from “Top Scorers”

Selected from the regions affected by the pipeline route and the plant

Trainees who prove their technical competence and commitment will be given the opportunity to ‘migrate’ into the 3rd batch.

Selected to complete the number of technicians required for the site

To be recruited in 3Q 2007 to meet the ongoing need for technicians (turnover, promotion….)

The “top scorers” Training program consisting of
- Intensive English
- Common Oil & Gas Technology Foundation
- LNG Specific Course
- OJT inside and outside Yemen

The second best team. The training program was customized due to the academic background of the trainees (predominantly high school education only).

The Yemeni high school certificate was identified as being below international level.

Intensive foundation courses in Math, Physics and Chemistry were launched, to bridge the gap.

A ‘mini’ common course was conducted followed by specialized training in safety, warehouse etc.

Same Training program as Batch 1 with the added advantage that the Common Course was ‘enhanced’ based on feedback from the previous batches.

Training program as above. “Graduates only” to ensure optimum quality.

OJT will be on site at Balhaf – not abroad.
A smaller organisation of “Coaches” has now been set up on Site
Technical Trainees - Common Course

### Sciences Refresher
- Applied Maths (30)
- Applied Physics (30)
- Chemistry (30)

### Process Operations (170 Sessions)
- Introduction to Oil & Gas Industry (17)
- Oil & Gas Processing (30)
- Refrigeration & Cryogenics (15)
- Utility Systems (19)
- Boilers & Water treatment (14)
- Process Static equipment (25)
- Process Rotating Equipment (50)

### HSE (72 Sessions)
- HSE Induction (12)
- Safety (52)
- Health (4)
- Environment (4)

### Mechanical Maintenance (71 Sessions)
- Industrial Drawing (15)
- Mechanical Elements (25)
- Hydraulics (8)
- Pneumatics (8)
- Piping & Valves (15)
- Metallurgy
- Corrosion
- Lubrication, bearings….

### Electrical Maintenance
- Role Function Plant Electrical Equipment (10)
- Electrical Technology (62)
- Scope of work Electrical Maintenance (14)

### Instrument Maintenance
- Role Function Plant Instrument Equipment (16)
- Instrument Technology (54)
- Scope of work Instrument Maintenance (6)

### Sport
- 2 hours per week

### Weekly Quiz
- 3 hours per week

Common course: 705 sessions - 30 hours per week (6 days - week) Rotation 6x1

Given to everyone, to ensure solid “foundations”
Batch One (89) – “On the job” first experience ended 22nd March. Candidates then divided at our discretion by their observed potential / personal preference as follows:-

50 – Maintenance (22 Mechanical, 12 Electrical, 16 Instrument)
37 – Process

“Discipline–specific” training began 2nd April (Training Centre (Operators), Workshops (Techs))

Batch Two - 61 in the original intake, plus 17 from Batch 3 and 1 from Batch 1.

Intensive English Introduction complete. Common Oil & Gas Technology training began 14th April. Divided into appropriate disciplines thereafter in the same way as Batch 1.

Batch Three - Originally 45: the best 17 succeeded in “moving up” into Batch 2.

Intensive English training, then “Mini” Common Oil and Gas course.
Of the remaining 28, 15 became Technical Assistants, 13 became Firefighters.

Batch Four

Originally scheduled for recruitment in October 2007. To be predominantly Graduates and college students. Deferred to mid 2010 due to the success rate of the previous intakes.
Diversity – Trainees & Instructors

In addition to the Technical, trainees, we trained smaller teams of Administrative and Marine Trainees.

Trainees have been sourced from every Governorate in Yemen.

11 different nationalities of Instructors were engaged in the Training Centre which we converted ourselves.
Training & Development – Facilities

• **Dhahban** workshops were equipped by YLNG at a cost of $450,000 +. Operational 7\textsuperscript{th} April 2007.

• **3 Ministry of Vocational Education Instructors** were offered experience in the workshops – but declined.

• **Workshops were handed to the Ministry with all equipment** when technical training moved to Balhaf.

• **Balhaf Training Centre** – a purpose built Training centre was built on-site at Balhaf and opened in May 2008. It has 2 Training Coordinators & 10 Coaches transferred from Sana’a, plus a Process simulator.

• **Competency assessment & development, and behavioural training continues at Balhaf, indefinitely.**
On Job Training, Dhaban Workshops

The trainees received:

• Three months of Intensive English.

• 8 months of basic oil & gas technology training.

• 5 months of intensive “OJT” abroad (until our plant is operational) in Egypt, Syria, Oman, Indonesia etc.

• …followed by c. 8 months’ on-site pre / commissioning experience, prior to taking up ALL Technician & Operator posts on site. Yemen LNG has no expatriates at this level.
89 (Batch 1) started training, 15 April 2006.

61 (Batch 2) started 4th September 2006.

45 (From the underprivileged Marib and Shabwa governorates) started 1st July 2006

15 Admin Trainees (Marib and Shabwa) started May . June 2007

210

Outcome (February 2009)

160 Technicians / Operators on site and assisting with Commissioning / Startup

15 Assigned to Technical Assistant posts

13 Trained as Firefighters in Yemen & Oman

14 Assigned as Admin Assistants

202 6 failed and 2 (ill) will re-start with Batch 4.
HR Lessons Learned

Why did the Training programme work so well?
Training – our Advantages

• We had realised that LNG technical recruitment is “different”

• We had 3 years – i.e., only just enough time...

• We had **total** support from our Management - and an outstanding relationship between Ops & HR – which we built “in-house”.

• We had experienced international recruitment & training staff

We believed we could do it – and had no other options!
How we made the Training work (1)

- We spent $1 million to rent a hotel where the Trainees lived, learned to study together – and became a team.

- We ignored tribal boundaries – as far as we could - and consciously built a new tribe “inside our fence”

- After classroom / training-centre training, we sent the trainees abroad (Segas in Egypt, Indonesian LNG, (Bontang), Total Syria etc.) at a cost of c. $9 million to show them how to operate “live plant”, and learn from seasoned technical professionals.
How we made the Training work (2)

• Psychology: We quietly emphasised the “prestige” of being Yemen’s first LNG Operators / Technicians.

• Their personal success in the selection / testing process generated intense pride and “cameraderie” – which transcended tribal loyalties to a certain extent.

• The second and third batches saw the “esprit de corps” in Batch 1, and worked exceptionally hard to reach the same level – an unexpected “bonus”.

• Some Batch 3 trainees (the poorest educated) nevertheless achieved “promotion” to Batch 2.
• On their return home after 4 months abroad, “Batch 1” was assigned to the Project teams on site to assist with commissioning, and to “walk the plant”.

• Technical training also continued, from the best Instructors, now transferred into line jobs on site.

• “Batch 1” – the best qualified – was encouraged to set the standard for the rest.
Training success factors (1)

- Outstanding teamwork between HR & Operations. A genuine “common goal” project, which built a team as it progressed.

- The high-profile Trainee recruitment campaign, which enabled us to find **the top 200 candidates in the country**. We chose the very best.

- Our “world tour” Recruitment strategy for Instructors & Supervisors – we found excellent staff, who stayed with us - and transferred to site.

- A totally transparent Trainee selection process, and rigorous in-house training, delivered without compromise.

- **The human factor**. We did the interviews ourselves, face to face. We outsourced only logistics. *We made success a personal commitment.*

- **The unexpected**: once the “esprit de corps” began to take hold among the trainees, we let it work for us.
Training Success Factors (2)

- Rigorous weekly testing designed to highlight non-performance – with publication of all results, to highlight the ones who were not trying hard enough.

- Dismissal of non-performers (6) after repeated warnings.

- The sheer quality of the training provided – in Yemen and abroad. We worked our Instructors hard, and revised the syllabus constantly.

- The people who delivered the programmes. A multi-national team, on well-designed benefit packages (29/27 rotations, business class flights, “Yemenisation” bonuses – many in their first expatriate posts.)
Reflections….

☑️ If you have well educated, adaptable candidates, then this programme can be delivered anywhere in the world.

☑️ It’s still tough. You still need outstanding Training Managers, Syllabus designers / Instructors. Much “basic education” must be re-checked.

☑️ Many will have to be Contractor  Expats during the early years – even the major IOC’s do not have enough staff “in house”. They are worth the cost – especially if you transfer them to site after the initial training, into “line” jobs – and they are temporary...

☑️ Concentrate your efforts on hiring and training young, adaptable, Operators, Technicians and Engineers. They will be the technical core of your entire LNG industry - with the most in-depth knowledge.

☑️ Of course, hire plenty senior staff of your own nationality – but expect clashes as the smarter, younger, ambitious trainees progress. (*Expats* in these positions may be easier to replace…)
Reflections (2) – Issues still exist…

Think hard before you bring back too many expatriates of your own nationality.

- They have earned expatriate-level salaries abroad, and find it very hard to adapt to “national” salaries again – they can disrupt the motivation of your trainees, and raise salary expectations unrealistically.

We are already bringing in “batch 4” to allow us to promote many former trainees, and begin to replace expats – but we still have unrealistic expectations of promotion / salary increases, based on “time in job”, not “performance” – a cultural issue.

If you do not wish to lose your Trainees to the International market, expatriate them yourselves to your partners on reciprocal deals. Give them the “adventure” they seek, but keep their expertise in your own companies. You may be able to bring them back in senior posts later.
Nevertheless - We Are Here Today...

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
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<tbody>
<tr>
<td>490+</td>
<td>Yemeni nationals hired / contracted directly including 20 Yemenis repatriated, in a company of 230 Expats (50 from Total) in the core organisation</td>
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<tr>
<td>160</td>
<td>Technical trainees hired to Tech / Operator jobs and also now with start-up / commissioning skills. Their quality is consistently praised by expat supervision.</td>
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<tr>
<td>15</td>
<td>Technical Assistants (originally applied as Trainees)</td>
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<tr>
<td>14</td>
<td>Admin Trainees from villages on the Plant / Pipeline route, now doing On-Job-Training, on the site</td>
</tr>
<tr>
<td>13</td>
<td>Former Trainees trained as Fire Fighters</td>
</tr>
<tr>
<td>38</td>
<td>Marine Tanker trainees studying in India &amp; Malaysia</td>
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67.8% Nationalisation, at start-up.
Balhaf Plant, 2005 / 2009

- Built by an international partnership

- 68% operated already by National staff.

- 90% Nationalisation objective by end 2015.

Phil Campbell
September 2010
Recruitment, Culture, Compensation & Benefits
Recruitment Success Factors - Practical

- Good – but *not* exceptional - financial packages were offered:
  * 29/27 rota for everyone, plus **permanent** jobs for the Yemenis,
  * solid dayrates plus good duration (3+ years) for contracted expats.

- Carefully selected, credible **Agencies** in key locations worldwide, to give contracted expats support, tax advice, medical care in the home regions… *If we had “direct hired” them, we would have had to do this ourselves.*

- We recruited expats & Yemenis ourselves, made recruitment decisions together and accepted no-one whom we did not think met our standards.

- We used identical interview formats and pre-designed forms, in every country. This made the final selection process fairer and clearer.

- The new Expats and Yemenis went through an all-day Teambuilding event, to break down barriers and start building teams.
2007 Target: Engineering / Process Supervisors, to join in November 2007. To be Yemeni wherever possible, but any nationality was acceptable if Yemenis were unavailable.

Strategy: Worldwide advertising—Internet, Press, Agencies. Minimal reliance on any one nationality, maximum commitment to technical capability - and to willingness to train their Yemeni staff.

Method: “World Tour” (8 countries, 6 weeks, 1Q 2007) by an HR & Ops team. Face to face presentations, interviews & selection – by us. Only the logistics was outsourced. All Organised and managed from Yemen.

7,058 applications, 21 nationalities shortlisted and interviewed
137 selected - only 8 offers declined
Benefits – Simple, effective

• Medical Assistance scheme: 95% company-subsidised. *Our only “unpredictable” benefit in terms of cost.*

• Children’s Educational Allowance - $300 per child p.a.

• Family Immunisation programme – 1,400 vaccinated

• Laptop Computer purchase plan – 2 year loan

• Savings Plan – Launched at last, this year.

• Staff Consultative Committee – Since July 2007

• Scholarship Programme – Commence 2009.
Compensation - HR Lessons Learned

• Start **salary surveys** even before you arrive in country: establish your baselines, plan your costs and long term budgets. *Decide your “market position”*

• Install an HR database asap. Use an established one. Don’t re-invent the wheel.

• Establish a culture of payment **for results**. Avoid “General Increases” wherever possible.
**Compensation - HR Lessons Learned (2)**

- HR, Ops and Contracts must cooperate to develop acceptable **staff & contractor** personnel terms, rates.

- Align **expat and national staff’s** terms and conditions as far as reasonably possible. Minimise the differences.

- Expect to get some things wrong! Be ready to adapt.

- Place Industrial Relations specialists on site to coach sub contractors in “best practice” – avoid risk.

- Be good to your contracted staff – keep their contact details, hire the best to your company – make them want to work for you again, and to bring their friends!
HR Lessons Learned - General

- **Induction is critical** – Use your National staff’s expertise. Differences are wider than we think. YLNG launched “Project Excellence” to address this.

- **“Over-man”** on expats in key posts initially – you **will** have some “turnover” and you can release the excess staff as you find good quality Nationals.

- Set up your Staff Consultative Committee asap.

- Be prepared to concede on many small issues – but over a long period. Design benefits with this in mind.
These values were developed by both the senior and middle management teams, and have been unanimously endorsed by staff.
HR Lessons Learned – Culture

• If it’s an *oral* culture, Policies, Procedures, Checklists, Memos & Intranet do not work to the same extent as in a literate culture. *Accept the need to talk more often.*

• Attitudes to time, commitment, finishing a job, putting leisure / family time before work etc., are all different between cultures. *Do not let these frustrate you.*

• Knowledge means job security – and therefore, is often not well shared. *Expats were incentivised to share.*

• In many societies, individuals are expected to use their influence to employ their family and friends. *You do not have to comply – but understand the pressure.*
HR Lessons Learned – Culture (2)

• Do not tolerate repeated misbehaviour by your expats – it undermines the culture you are trying to build. Remove them early.

• Spend time and effort on educating subcontractor company management – this is where many of your problems actually arise.

• Remember that your entire project is an advertisement for your company: the success of your next major project may be dependent on your actions on this one.

...and whatever you learn, record it and pass it on, at events like these. You’ll need it again!
Project re-launched 2005.

1st Train Operational 2009.

Both Trains operational 2010.

Capacity: 6.7 mn tonnes p.a. for 20 – 25 years.