United Nations
Group of Experts on
Geographical Names

Working Paper
No. 101

Eighteenth Session
Geneva, 12-23 August 1996

Item 5
of the Provisional Agenda

REPORTS OF THE DIVISIONS

Report of the National Committee on Geographical Names and of the Survey Department in the Libyan Arab Jamahiriya

Submitted by the Arab Division as a part of the Divisional Report

Submitted by Libya

The Great Socialist People's Libyan Arab Jamahiriyah
Secretariat Of Planning , Economics and Trading

Report Of
National Committee on Geographic names

Introduction

A national committee on standardization of Geographic names in The Libyan Arab Jamahiriyah was appointed by Minister Of Planning , and was entrusted with all matters connected with geographic names . This committee is composed of various govermental departments to form a representation of different ministries , some universities and the surveying department of Libya (S.D.L.) . The latter is the most concerned with the collection and standardization of geographic names in the country .

Romanization Of Geographic Names

Because Libya is located near some neighboring African countries, and because some old tribal names are not Arabic . the standardization of these names is not an easy task . Geographic names are collected in field in both written and oral forms

simultaneously . Standardization and Romanization of these names is the responsibility of S.D.L. The transcription of Arabic geographifcal names in Roman characters enables non-Arabic speekers to pronounce the names as close to the correct Arabic pronounciation as possible . Beirut System For Romanization Arabic Names is adopted for this task .

Mapping in Libya

Topographic maps of Libya were compiled and published in Italian during the Italian occupation of the country and later in English after the Second World War . These maps are mainly

- Maps in Italian at scale 1:1000000 for the whole territory
- Maps in Italian at scale 1:400000 for the whole territory
- Maps in English at scale 1: 50000 for northern part of territory
- Maps in English at scale 1: 250000 for northern part of territory
- Maps in English at scale 1: 100000 for northern part of territory

In 1971 The Surveying Department Of Libya (S.D.L.) was founded . One of the obligations of S.D.L. is the Arabization and Standardization of Geographc names in the existing maps . Extention and updating of 1:50000 existing topomaps of the

country began in 1979 . these maps cover an area of 190000 sq. km. (in 276 sheets) All on-map-names were checked during the field works and new names were collected and added These new and updated 1:50000 topomap series of the country are bilingual .

Topographic maps for more than 300 cities and villages at large scales (namely 1:1000 , 1:5000 ,and 1:10000) were compiled and published .All information and geographic names on these maps are in both Arabicand Roman charachters Some of the existing 1:250000 topomaps were republished with names in Arabic only .

The National Atlas Of Libya was puplished in 1978 in two versions , the first being in Arabic and the second in both Arabic and English . And , at the same time . a relief map of Libya was published for educational purposes . with cooperation Ministry Of Education and under supervision of S.D.I.. . at scale 1:1000000 and 1:1500000 . Also . for the same purposes . wall maps were published for the world , the Arab world and different continents . A globe was also bublished All geographic names of these products are in Arabic .

Thematic maps at scale 1:25000 for forest inventory of north-west part of the country are published in Arabic . and 1:10000 maps for north-west coastal belt covering an area of 7900 sq. km. (218 sheets) are publshed in both Arabic and English .

A cartographic production of a mapping project that will cover some 340000 sq. km. of the northern part of the country in 1970 sheets at scale 1:25000 began in 1992 . Now 94100 sq.km. (547 sheets) are ready for printing .

SURVEYING DEPARTMENT OF LIBYA | NATIONAL CARTOGRAPHIC PROJECT

GEOGRAPHICAL NAME LIST FOR MAP AT SCALE 1 : 25000

SHEET No. 3115-423 رقم اللوحة | SHEET NAME QŪZ

COLLECTED BY جمعت من طرف | DATE 27.5.92 تاريخ

الحجم SIZE	نوع الحرف TYPE No	ARABIC NAME FOR PRINT الاسم العربي الصحيح / TRANSLITERATION بالاحرف اللاتينية	خط العرض LATITUDE	خط الطول LONGITUDE	ملاحظات REMARKS

APPROVED BY : ل :

SURVEYING DEPARTMENT ة

OF G.S.P.L.A.J. ع

Date :..... تاريخ

RAPHIC PROJECT | مشروع تخريط الجماهيرية | مصلحة المساحة

1 : 25000 | كشف الاسماء الجغرافية لخرائط مقياس رسم

EET NAME QŪZ AS SURŪR | اسم الخريطة قوز السرور

DATE 27.5.92 تاريخ | AREA T.b.S منطقة ط.ب.س | CASETTE No. ..... رقم الشريط

الرقم No	مداد الشريط TAPE COUNTER No	الظاهرة FEATURE	الاسم باللغة العربية بالاحرف اللاتينية ARABIC NAME TRANSLITERATION	راى البلدية BALADIYAT PROPOSAL	ملاحظات REMARKS
1		Sea	البحر المتوسط Mediterronean Sea		
2	23	Sandy Hills	قوز السرور Qūz os Surūr		

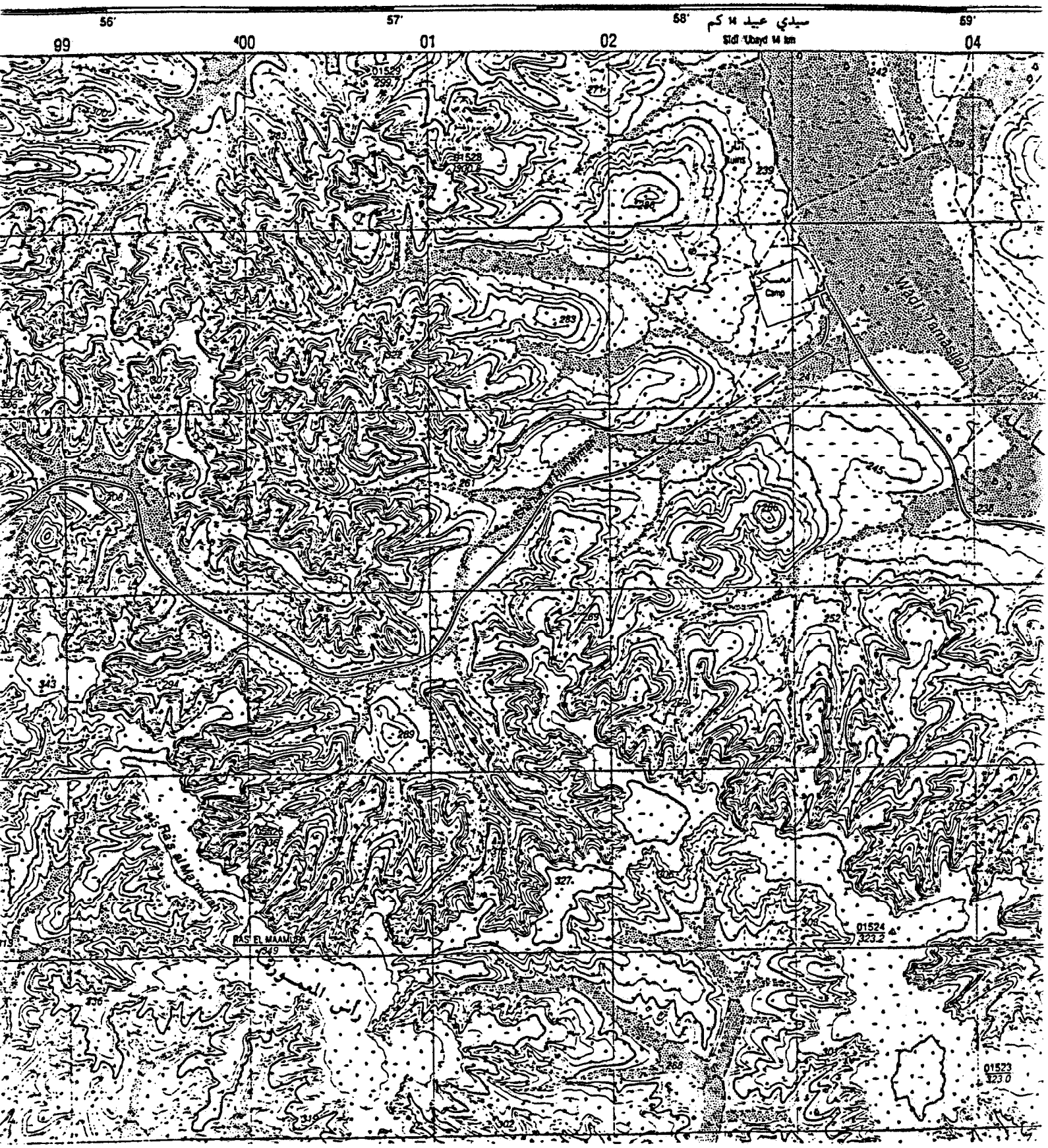
VED BY : اعتمدت من قبل :

DEPARTMENT مصلحة المساحة

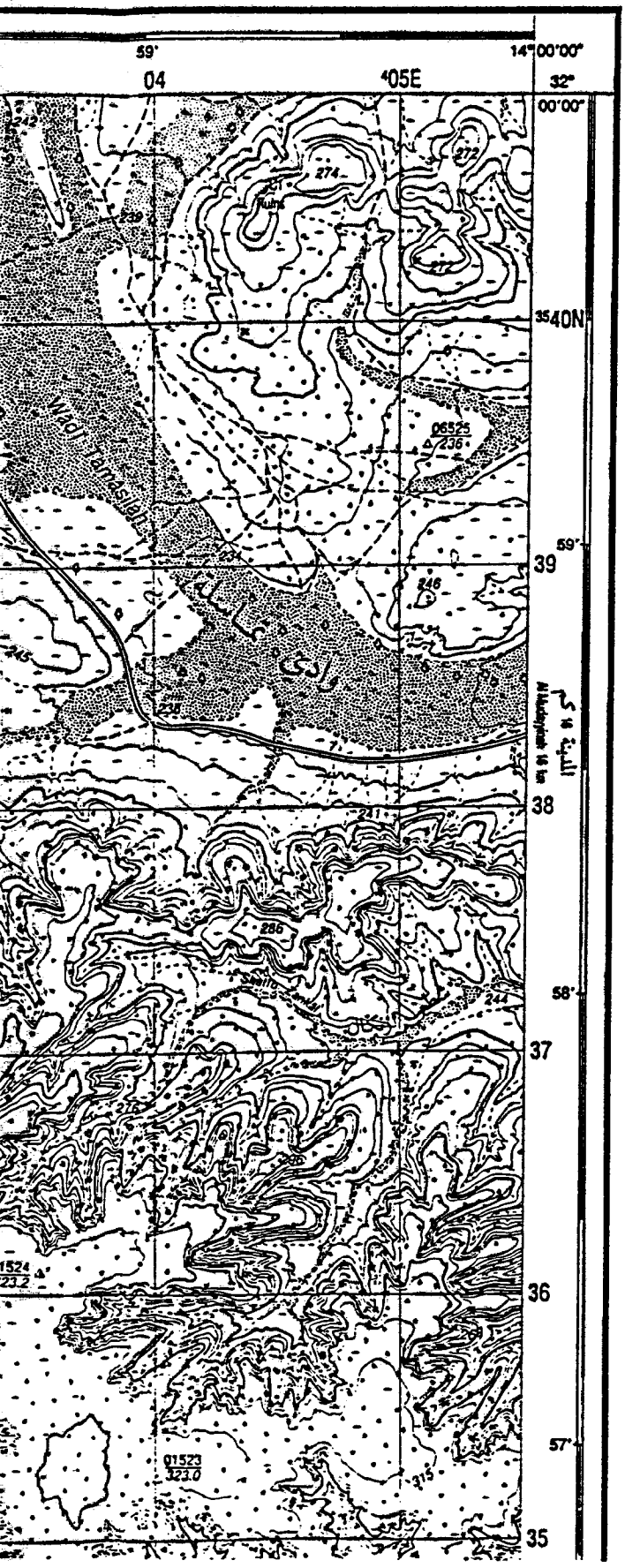
S.P.L.A.J. ج.ع.ل.ش.ا.ع.

رأس المعمـــــورة MURAH

25 00 لوحة رقم 3113-444



ج.ع.ل.ش.إ.ع. 25 000:1 لوحة رقم



LEGEND الاصطلاحات

SETTLEMENTS مناطق سكنيـــة

Building: Small, Large	مبنى : كبير، صغير
Built-up area, Streets	منطقة مبنية ، شوارع
Through street, Footbridge	جسر للمشاة ، شارع لحركة المرور السريعة
Wall	سور
Other permanent fence	سياج دائم آخر
Mosque, Shrine, Tomb	قبر، ضريح ، جامع
Memorial, Cemetery	مقبرة ، نصب تذكاري
School, Hospital	مستشفى ، مدرسة
Ruins: Small, Large	مبان مهدمة : كبيرة ، صغيرة
Antiquities, Fort	حصن ، آثار
Stadium, Hippodrome	ميدان فروسية ، ميدان رياضي
Greenhouse, Encampment	مخيم ، صوبات
Barrack, Underground dwelling	مسكن تحت الأرض ، إنشاءات مؤقتة

INDUSTRIAL INSTALLATIONS إنشـــاءات صناعيـــــة

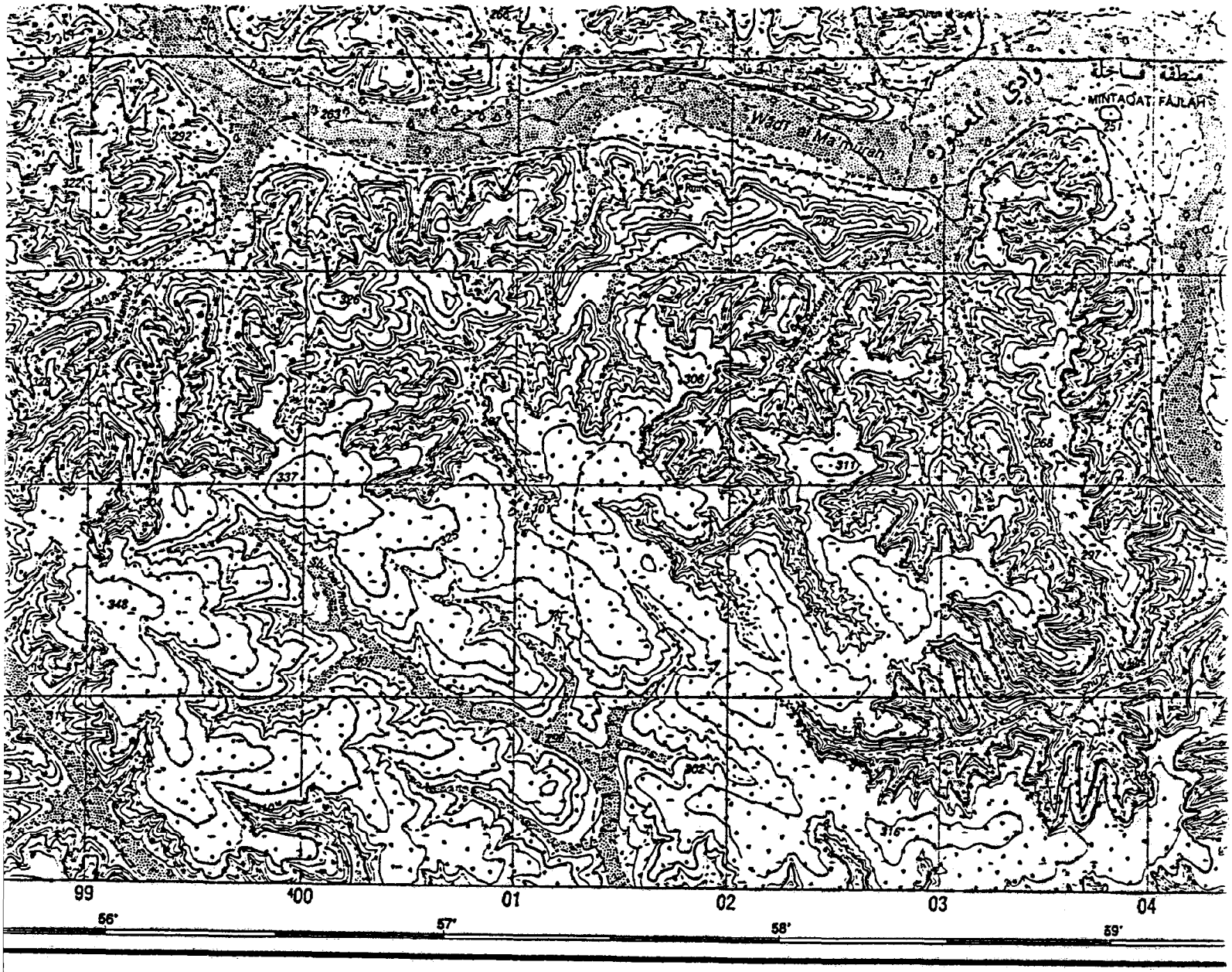
Transformer, Electric substation	محطة كهرباء فرعية ، محول
Power transmission line with pylons	خط كهرباء للجهد العالي على أعمدة
Local HV line	خط كهرباء محلي للجهد العالي
Telephone line	خط هاتف
Aerial mast, Relay station	محطة ترحيل ، سارية
Well: Oil, Gas	بئر : غاز ، نفط
Emptied oil or gas well	بئر نفط او بئر غاز فارغة
Tank: Oil, Gas	خزان : غاز ، نفط
Pumping station: Oil, Gas	محطة ضخ : غاز ، نفط
Overground pipeline: Oil, Gas	خط أنابيب نفط او غاز فوق سطح الأرض
Underground pipeline: Oil, Gas	خط أنابيب نفط او غاز تحت الأرض
Opencast mine: Used, Disused	منجم مكشوف: غير مستغل، جاري استغلاله
Quarry, Gravel-pit	محجر حصى ، محجر

ROADS طـــرق

Dual carriageway	طريق رئيسي مزدوج
Main road, Width of surface	طريق رئيسي معبد ، عرض سطح الطريق
Secondary road, Kilometre stone	طريق ثانوي معبد ، علامة كيلومترية
Local surfaced road	طريق محلي معبد
Local unsurfaced road	طريق محلي غير معبد
Main desert track	مسلك صحراوي رئيسي
Track	مسلك
Trail	درب
Road under construction	طريق تحت الإنشاء
Parking, Petrol station	محطة وقود ، محطة سيارات
Bridge, Culvert, Hardened ford	معبر صلب ، معبر ، جسر
Embankment: Ground, Concrete	حافة : خرسانية ، ترابية
Cutting: Ground, Concrete	قطع : خرساني ، ترابي

RAILWAYS سكك حديدية

Multi-track railway, electrified	خط سكة حديدية متعدد مكهرب
Multi-track railway, unelectrified	خط سكة حديدية متعدد غير مكهرب



مقيـاس Scale 1:25 000

0 500 1 000 1 500 2 000 metres

المسافة بين خطوط المناسيب 5 أمتار
مع خطوط ثانوية بيعد 2.5 متر
المستوى الرأسي : متوسط منسوب البحر المتوسط

إسقاط مركاتور الدولي المستعرض
المستوى الأفقي : الليبي - الأوربي 79

الخطوط المرقمة بلون أسود تعين الكيلومتر الواحد لانحراف مركاتور الدولي المستعرض، المنطقة 33 الكراوني الدولي

أعدت تحت إشراف مصلحة المساحة - ج.ع.ل.ش.ا.ع.
من صور جوية التقطت في سنة 1991 م بمقياس 1:40 000

AT 2.5 METRE INTERVALS
THE MEDITERRANEAN

PROJECTION
DATUM 79

ETRE UNIVERSAL
ATIONAL SPHEROID

epartment of G.S.P.L.A.J.

:40 000 in 1991

دليـل اللوحـات المجـاورة
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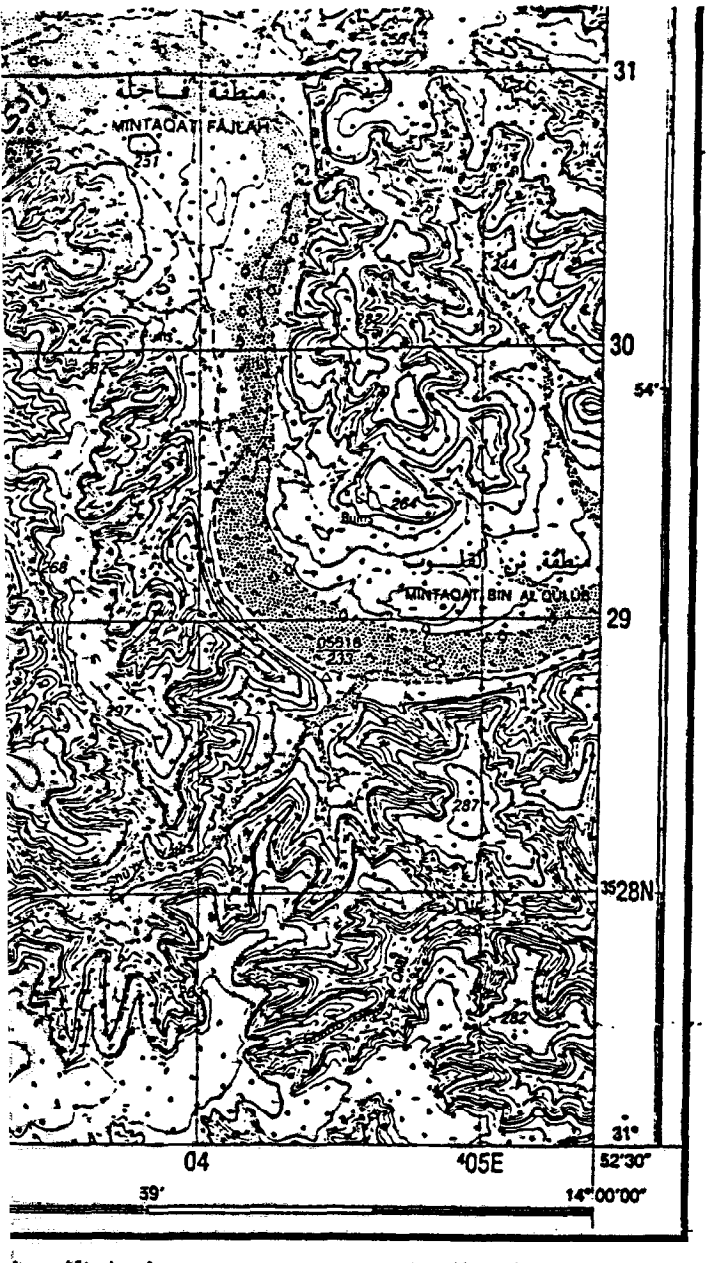
الطبعة 1 - مصلحة المساحة
Edition 1 - S.D.L.

250 لوحة رقم 3113-444



Palm trees with other cultivations	أشجار نخيل مع مزروعات أخرى
Coniferous forest	غابة صنوبرية
Leafy forest	غابة غير صنوبرية
Park	حديقة
Bushes, Scrub	أشجار منخفضة ، شجيرات
Grazing land	مراع
Sand hummocks with low growth	رواب رملية مع أعشاب قصيرة

WATER FEATURES المياه

Pond, Dirty-water pond	بركة ماء ملوثة بالنفط ، بركة
Saline lake, Dry lake	بحيرة جافة ، بحيرة مالحة
Sabkhah	سبخة
Dam, Dam with road	سد مع طريق ، سد
Levee, Levee with road	حاجز مع طريق ، حاجز
Seasonal streams (wadi beds)	واد موسمي ضيق
Wadi valleys	وديان
Indefinite wadi valley	واد غير محدد
Vanished wadi, Spring	عين ، واد متلاش
Well: Perennial, Dry	بئر : جافة ، دائمة
Well: Deep-water, Artesian	بئر : أرتوازية ، عميقة
Water bore-hole, Rain-water collector	صهريج للمياه ، بئر مغلقة
Water tank, Water pumping station	محطة ضخ مياه ، خزان مياه
Overground water pipeline	خط أنابيب ماء سطحي
Underground water pipeline	خط أنابيب ماء تحت الأرض
Great Man-made River	النهر الصناعي العظيم
Water tower, Fountain	نافورة ، برج للمياه

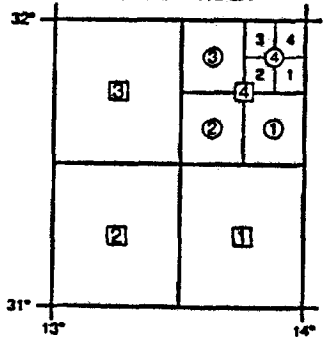
MISCELLANEOUS متنوعات

Doppler print, Horizontal point	نقطة أفقية ، نقطة دوبلير
Bench mark, Pillar	عمود ، محطة تسوية
International boundary	حدود دولية
Baladiyah boundary	حدود بلديات
Meteorological station, Rain gauge	مقياس أمطار ، محطة أرصاد جوية
Sand-breaker	مصد للرمال
Airport runway	مدرج مطار
Landing strip	مهبط

SEASHORE شاطىء البحر

Sand beach, Scarp	شاطىء رملي ، منحدر
Land subject to inundation	أرض معرضة للفيضان
Foreshore flat (sand or mud)	شاطىء أمامي سطحي
Depth contours, Stony shore	شاطىء صخري ، خطوط عمق
Boulder rock, Cliffy shore	شاطىء منحدر ، صخر جلمودي
Limit of danger, Reef	حاجز صخري ، حد الخطر
Rock: Sunken, Awash, Exposed	صخر : بارز ، يغسله الماء ، مغمور
Wreck: Sunken, Exposed	حطام سفينة : بارز ، مغمور
Buoy, Light buoy	طافية ضوئية ، طافية
Beacon, Lighthouse	منارة ، منارة بحرية صغيرة
Leading line	خط دليلي
Breakwater, Jetty	حاجز ، كاسر الأمواج
Pier, Quay	رصيف ميناء ، رصيف

دليل اللوحات
SHEET INDEX



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الطبعة ١ - مص
- S.D.L

ج.ع.ل.ش.إ.ع. 1:25 000 لوحة رقم 44

ABSTRACT

The paper presents a short discribtion about the departemental structure of the Survey Department of Libya (SDL), its role in the geodetic work in the country, then it gives a historical background on the major geodetic activities, followed by some technical discussions on these activities, and the problems encountered during execution of such work and those hindering the geodetic development in the country. Finally some thoughts and remarks on the realization of an integrated geodetic network for the whole continent of Africa are discussed.

SURVEY DEPARTMENT OF LIBYA (SDL)

SDL was founded in 1971 as a department under the ministry of planning, now under the General People's Committee of Planning. SDL in its departmental structure contains four technical divisions; the department of Photogrammetry and Remote Sensing, the department of Cartography, the department of Reseach and Development, and the department of Geodesy. The department of Geodesy is soley responsible for all the geodetic activities in the country.

GEODETIC HISTORICAL BACKGROUND

The geodetic work in Libya is relatively recent if to exclude the geodetic activities during the Italian colonization. The first major geodetic work was the triangulation chain established by the American Army Map Service (AMS) in the late fifties and early sixties. This work was the geodetic base for many development projects that followed, untill the late seventies when a network of 45 first order points distributed around the country at about every 250 Kms. This network was established and observed by the Institute Geogaphic National

(IGN) of France using the Transit Satellite System, and astronomical observations. Some of these points were connected together and tied to the AMS network by ground traversing and by geometric levelling. This network was referred to as the Supernet.

In the early eighties SDL started the National Cartographic Project. This project is to map the whole territory of Libya, This task triggered the need for new extensive geodetic work, which was conducted by two international companies; Aero-Service Corporation (ASC) executed 670 second order doppler points and 942 first order traverse stations, and Pol-Service Geokart conducted 7,468 levelling bench-marks and 63 first order gravimetric stations distributed around the country, and constructed 4 marigraphic stations along the mediterranean coast.

FIRST MAJOR GEODETIC WORK

In the 1956 an arc of first order basic triangulation, was initiated extending from the vicinity of 'Azizia' south to the 'Great Stony Desert' and easterly along the entire coastline untill it terminates at the Libya-Egypt border as shown in Fig. 1 This triangulation arc was connected to the triangulation stations 'Tadjera' and 'Kef Smounia' near Medenine in Tunisia. All computations were made on the International Spheriod, European Datum. After the final adjustment, the results were considered of first, second or third order of accurcy. This geodetic work was completed in 1961.

SECOND MAJOR GEODETIC WORK

In 1976 the monumentaion of the Supernet's 45 points around the country as shown in Fig. 2 was started, these points were observed using JMR satellite recievers and the Transit Satellite System. Astronomical observation to determine geographic latitude, longitude, and azimuth were also made on all of the Supernet points. Some of these points were tied to each other and

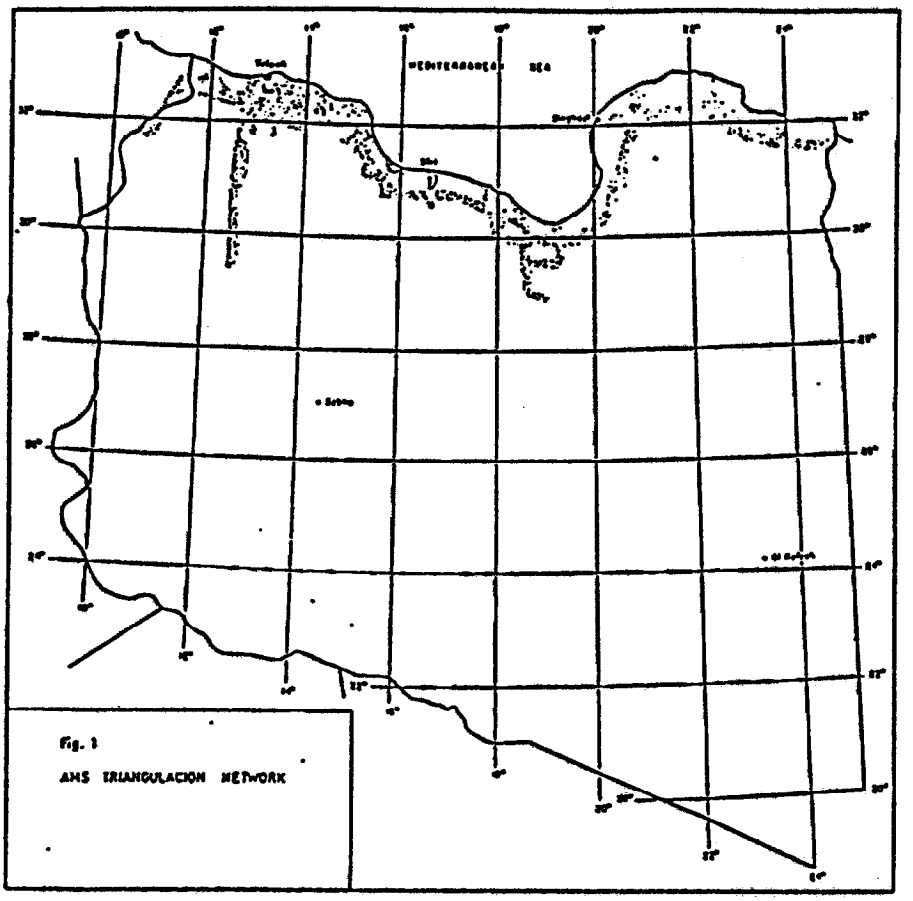


Fig. 1
AHS TRIANGULACION NETWORK

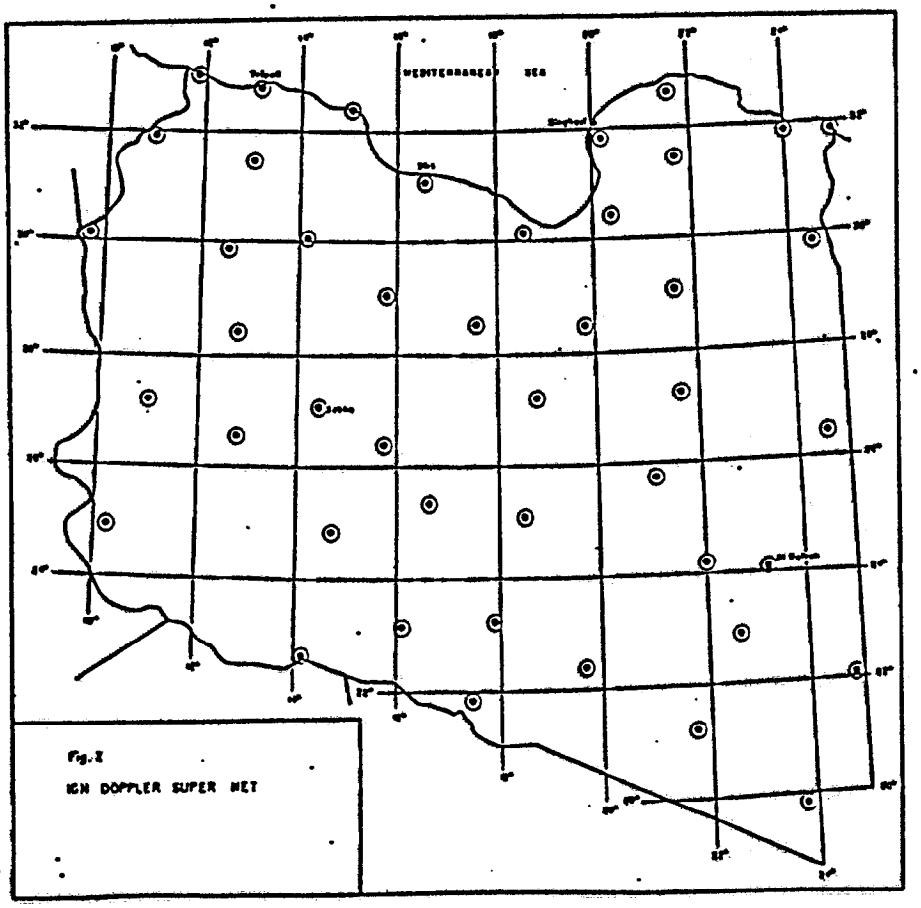


Fig. 2
IGN DOPPLER SUPER NET

to AMS network by ground traversing and by geometric levelling.

After the final adjustment of this network was completed, it was concluded that; it would be better to have a new refrence datum for the country instead of the European Datum that previously used by AMS. This new datum was called LYB79. Then all Supernet data was adjusted in this datum, the final standard deviations of coordinates were found in the order of 0.35m. which indicates a relative accuracy better than 1/600,000.

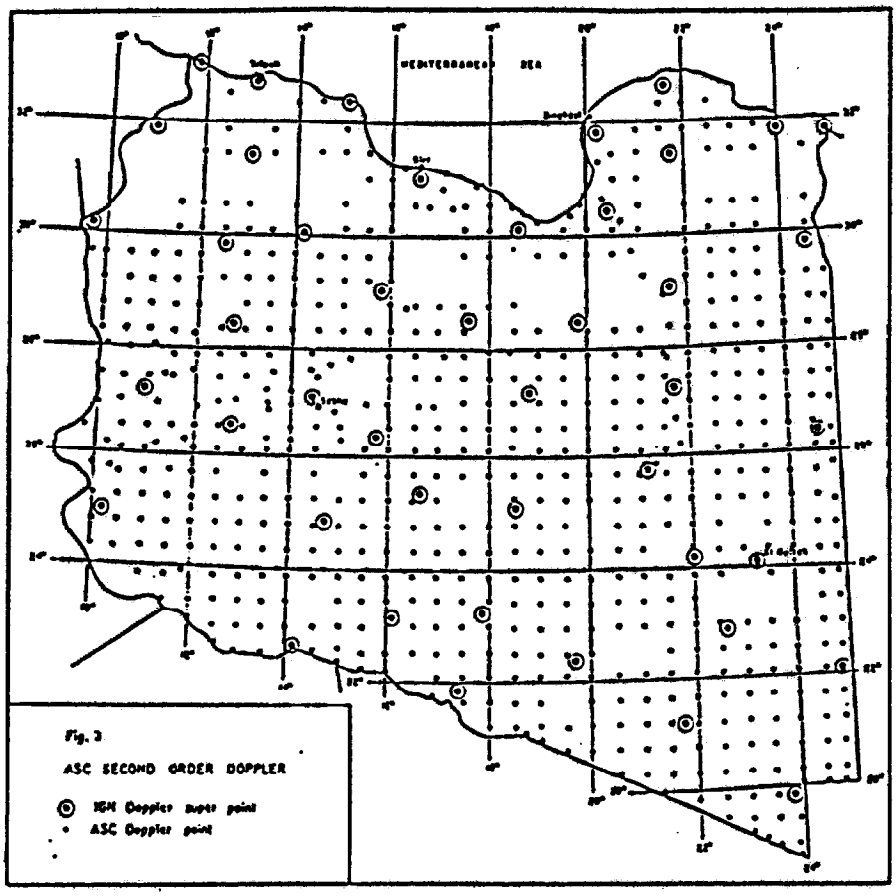
THIRD MAJOR GEODETIC WORK

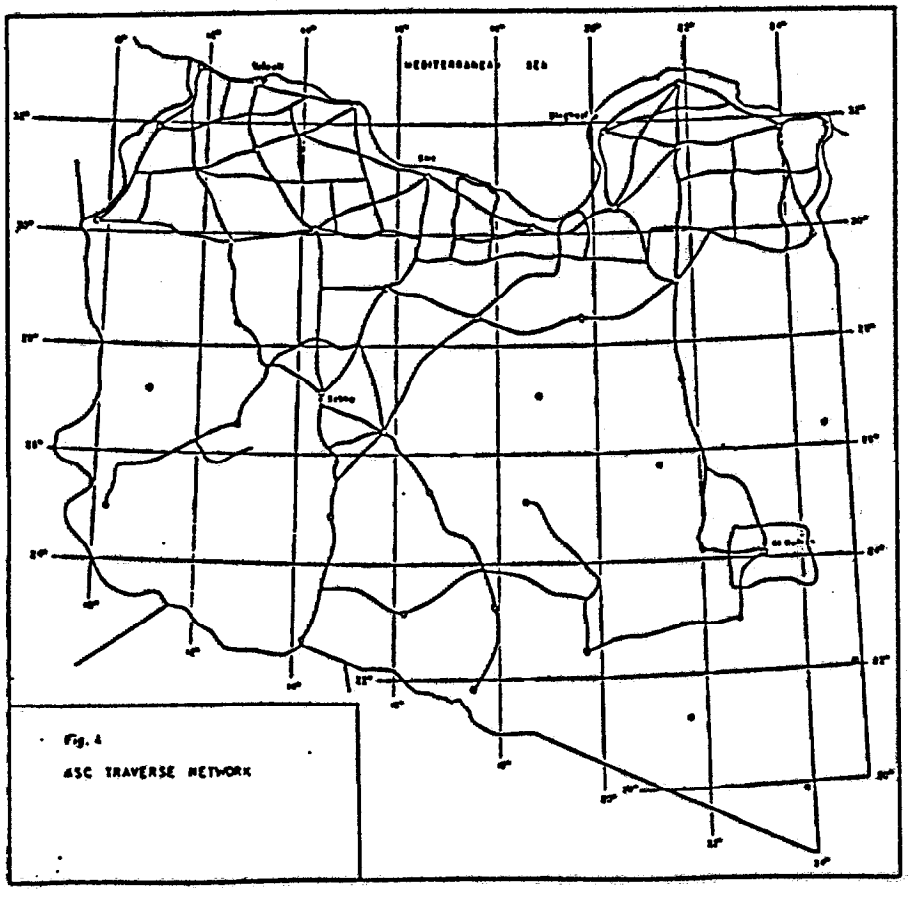
This geodetic work was conducted for the National Cartographic Project, which was later divided between two international companies as follows:

1- Aero-Service Corporation (ASC)

This company was awarded the contract to establish, measure, and adjust 670 second order doppler points, of which 619 totally new points and 51 were reobserved points as shown in Fig. 3 . ASC measured astronomical azimuths on 667 of these points. ASC was also awarded to conduct first and second order traverse lines of about 14,850 Kms. which ended by establishing 942 traverse stations and 138 full Laplace stations as shown in Fig. 4.

The doppler network was adjusted using Magnavox's MAGNET program, the final relative accuracy of this network was in the order of 1/150,000 or better. The traverse network was adjusted by the National Geodetic Survey of America's TRAV10 program in a simultaneous adjustment that contains 1,038 stations, 2,233 observed directions, 187 observed Laplace azimuths, 1,061 observed distances, and 66 control stations, the results of this traverse adjustment was generally better than 1/250,000.


MEDITERRANEAN SEA
Fig. 3
ASC SECOND ORDER DOPPLER
IGN Doppler super point
ASC Doppler point


MEDITERRANEAN SEA
Fig. 4
ASC TRAVERSE NETWORK

2- Pol-Service Geokart

This company was awarded the contract to establish, measure, and adjust about 23,000 Kms. of leveling lines which translates to about 3,015 first order, 3,424 second order, 1,029 third order benchmarks as shown in Fig. 5.

This company was also awarded the contract to establish, measure, and adjust 63 first order gravimetric stations as shown in Fig. 6. Of this 63 stations, 11 were determined using specially manufactured pendulum. These stations were tied to Warsaw in 8 international Tripoli-Warsaw connections. The remainnig 52 points were determined using Worden Master Geodetic Gravity-Meter, these points were connected to the pendulum points. All points were adjusted in a common weighted adjustment, and the final results were presented with respect to New Potsdam System of 1971 and IGSN 1971. The average mean square error obtained in this adjustment was about 0.05 mgal.

Pol-Service was also awarded the contract to construct 4 marigraphic stations in Tripoli, As-Sidrah, Binghazi, and Tubruq, and to continuously observe the level of the Mediterranean sea at these stations for a period of 24 months. After all data was collected and adjusted, it was found that the level of the sea decreases as a function of distance from west to east.

PROBLEMS HINDERING THE GEODETIC WORK IN LIBYA

The problems hindering the geodetic work in Libya can be divided into many different categories, to name a few:

1- Natural Problems

Libya is a vast country, more than 90% of its territory is arid and desert land. This made it difficult for geodetic survey teams to travel, maintain adequate supply of food, fule, water, spare parts, ... etc.

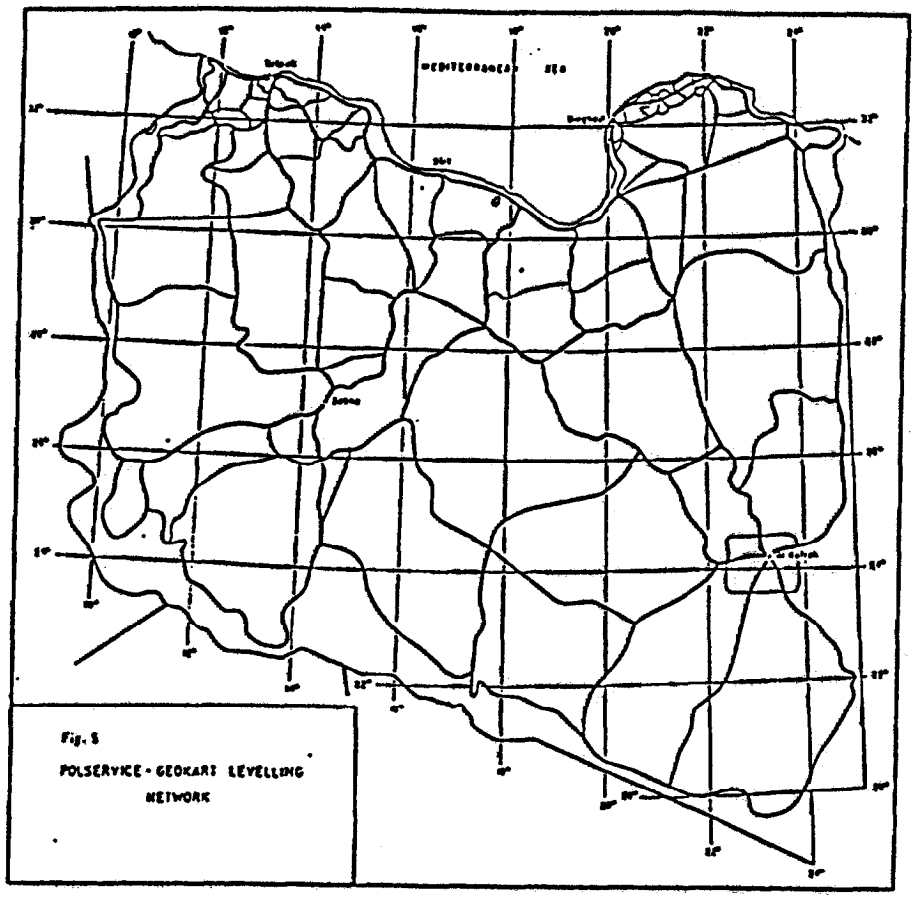


Fig. 5
POLSERVICE - GEOKART LEVELLING NETWORK

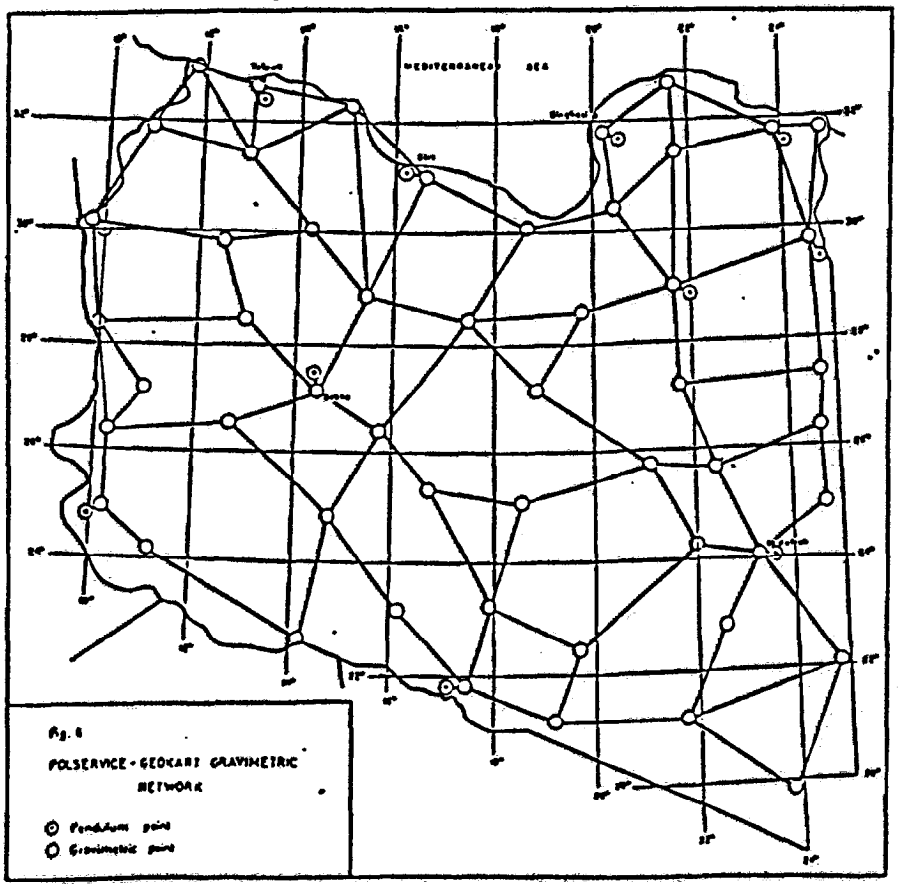


Fig. 6
POLSERVICE - GEOKART GRAVIMETRIC NETWORK

⊙ Pendulum point
○ Gravimetric point

2- Monumentation problems

Due to public un-awareness of the importance of the geodetic monument value this led to the distruction of many control points.

3- Different International Companies

As prieveously stated that most of the geodetic work if not all was conducted by different international companies, agencies, and/or institutions, and due to the lack of national detailed geodetic specifications, this created different types of procedures, specifications, and even different geodetic datums.

FUTURE GEODETIC WORK IN LIBYA

Libya covers an area of approximatly 1.75 million sq. Kms., which is about 6% of the African continent area. In order to map this vast country more geodetic survey is needed. The geodetic department in SDL is planning more densification of geodetic control to fulfill the geodetic requirement of the National Cartographic Project. It is also planning to use Global Positioning System (GPS) survey techniques during this densification program.

If proper computer facility are made available and adequate funding is allocated, SDL will conduct a common readjustment of all its exsisting geodetic data.

AFRICAN INTEGRATED GEODETIC NETWORK

Although it is very difficult to visualize one geodetic system for the whole continent of Africa, and even if such system will exists then it would be economically and technically very difficult for each country in Africa to transform all of its existing geodetic data and its cartographic information into this system. However some positive steps can be taken toward an integrated network as follows:

1- Request the African Organization of Cartography and Remote Sensing (OATC) to creat a scientific committee to study, compute, and determine a geodetic refrence system that best fit to the whole continent. This committee should also establish unified geodetic standards and specifications for all Africa.

2- All national and Pan African projects and studies which are on a large scale, such as hydrological, geological, seismological, ... etc. should be presented in the African integrated geodetic refrence system, and should be made available to all other counteries that may benefit from it.

3- Encourage the exchange of geodetic experts, knowhow, and tie the African educational institutions.

SUMMARY

Although the existing Libyan geodetic network needs some kind of unification or common readjustment, this network is considered as a very accurate network which can be used for many scientific, cartographic, and development projects in the country. This network can contribute a great deal toward an integrated African geodetic network.